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Effects of Information Processing Strategies on Rater Motivation in Job Analysis

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EFFECTS OF INFORMATION PROCESSING STRATEGIES ON RATER MOTIVATION IN JOB ANALYSIS

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ABSTRACT

Accuracy of the output resulting from a job analysis is of utmost importance to practitioners and human resource professionals. Without this accuracy, many of the organizational actions that follow can be prone to failure. One of the notable sources of inaccuracy in job analysis is motivation. Evidence of motivation as a source of inaccuracy in job analysis comes from findings which have been largely adapted from cognitive and social psychology literature. To bridge the gap more directly, this study examined how different variables such as self-efficacy, need for cognition, job complexity, and job analysis purpose impacted the relationship between information processing strategies and perceived motivation in the context of a job analysis. Through a survey posted on Amazon's Mechanical Turk, 198 respondents were asked to rate how motivated they would be to accurately complete a job analysis for their own job with various situational conditions. Additionally, the present study examined how these information processing strategies influenced perceived task difficulty. By using a sample entirely made up of job incumbents, this research was able to further examine the within group variation in preference for using either of the information processing strategies. Data analyses revealed a few key takeaways from this study. First, respondents were more motivated in the holistic strategy condition and saw it as less difficult than the decomposed strategy. Additionally, respondents were not equally motivated across the three job analysis purposes presented, with determining employee compensation as the

most motivating condition. The findings from this study can help aid practitioners' awareness of the effects varying information processing strategies may have on the motivation of their raters and subsequently, the accuracy of the results.

Keywords: motivation, job analysis, information processing

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CHAPTER I

INTRODUCTION

Effects of Information Processing Strategies on Rater Motivation in Job Analysis

Job analysis is a critical juncture in human resource management as it lays the ground work for all human resource initiatives that follow (Butler & Harvey, 1988; Schumacher, Kleinmann, & Konig, 2012). The job analysis process helps to identify and determine the particular job duties and requirements and the relative importance of those duties (HR Guide, 1998). Within the process, multiple avenues are used to ensure thorough job related information is obtained, including incumbent interviews, incumbent observations, and questionnaires. Typically, the first step is the completion of a questionnaire by the job incumbent, which will be the main focus of this research. The questionnaire identifies and details the job duties, responsibilities, and work environment that are leveraged throughout the job analysis process.

Given the significant impact of a job analysis on other human resource functions, as well as the temporal and monetary costs to an organization, it is critical that the data obtained are accurate. When information obtained from a job analysis is accurate, practitioners have the appropriate data available for them to make correct decisions.

However, when obtained job analysis information is inaccurate, job duties and requirements can be over(under)stated, resulting in the creation of incorrect job descriptions. These incorrect job descriptions cause employee training, selection, compensation, etc. to be conducted inappropriately, inviting a host of problems for an organization.

In order to highlight some areas where the accuracy of this information could be compromised, Morgeson and Campion (1997) created a framework detailing the multiple cognitive and social sources of inaccuracy that can arise during the job analysis process. One notable social source of inaccuracy, which will be the focus of this research paper, is motivation.

Thus far, prior research findings relating to motivation in job analysis have been adapted from the cognitive and social psychology literature. Additionally, the other studies which were drawn from the industrial-organizational psychology literature have mostly dealt with group motivation on a job analysis committee (Kerr & Bruun, 1983; Jones, 1984; Kerr, 1983; Kidwell & Bennett, 1993; Weldon & Gargano, 1985). Making concrete conclusions relating to job analysis based on these adaptations can be a problem for a couple reasons. First, job analysis questionnaires can often be completed on an individualized basis, in which raters may be differentially motivated than they might be when completing a job analysis in a group or committee. How one behaves in a group setting for a given situation can be the antithesis of how one behaves alone in the same situation (Morgeson & Campion, 1997). Additionally, making conclusions about job analysis motivation based upon findings in cognitive and social psychology literature can possibly obscure the unique effects that a job analysis may have on rater motivation. It is

possible that individuals are motivated in an entirely different way when it comes to job analysis than what is typical in the context of cognitive and social psychology research. In order to ameliorate the aforementioned concerns with these adaptations, this research will more directly measure perceived motivation on an individualized basis within a job analysis context. Participants, unaccompanied by other raters, will be presented with actual content from a job analysis questionnaire that takes the form of a couple different presentation styles. After examining each of the questionnaire examples, participants will then be asked how motivated they would be to complete a job analysis in this way. More specifically, motivation will be measured across two information processing strategies that are typically leveraged in a job analysis questionnaire: decomposed and holistic processing. While past research has examined the accuracy associated with each of these strategies, studies examining motivation across these strategies are lacking. Beyond this, the present study will look to examine multiple variables that may influence the motivation and difficulty perceptions of raters in job analysis.

Studying how these variables interact with the information processing strategies as they relate to difficulty and motivation can help to form a more clear and detailed picture of the relationships. Examining these interactions can help not only to determine if a relationship exists between variables but also how strong the interaction effects are. These factors to be investigated include: information processing strategies, self-efficacy, need for cognition, perceived task difficulty, job complexity, and job analysis purpose. Examining these additional variables will help to form a more comprehensive picture of motivation in the context of a job analysis.

In order to set up the rest of the thesis, it would be useful to first take a step back and discuss the literature in the realm of motivation, and then to hone in further on intrinsic motivation. Afterwards, a high level view of what a job analysis is, various ways it can presented, and why it is useful for practitioners can demonstrate the utility of the current paper. Then, circling back and tying together job analysis and motivation will help to make clear the direction of this paper, by highlighting where the job analysis motivation literature has been and where this paper will look to extend it. Lastly, the additional variables mentioned earlier will be discussed in order to highlight their utility in being included in this study.

Motivation

Motivation is broadly defined as the process that initiates, guides, and maintains goal-oriented behaviors. Motivation is the force by which people are driven to act upon a specific goal or activity in the face of different situational constraints. To be motivated means being activated or energized towards an end state (Ryan & Deci, 2000).

In past literature, there have been many theories of motivation that conceptualize and describe what motivation is and how it directs people's behavior. Discussing these theories will help to set up the rest of the current research and help to further state the importance of understanding motivation as it operates in a job analysis.

Drive Reduction Theory, created by Hull (1935), stated that people are motivated to reach a feeling of homeostasis, which is a feeling of internal balance or equilibrium. When a feeling of imbalance exists within people, they are driven or motivated to behave in a way that will close this gap and ultimately help them reduce this imbalance (Hull,

1935). For example, when people are hungry, they are motivated to find a food to eat in order to reduce their feeling of hunger and help them reach homeostasis once again. Hull suggested that all motivation is a result of this human desire to reach this feeling of balance.

Vroom's (1964) Expectancy Theory postulates that people are motivated to select behaviors that will ultimately result in a positive outcome. If people believe that exerting a certain behavior will be useful in achieving a goal or outcome that will be desirable, they will be motivated to behave in that way. This theory is made up of three parts: expectancy, instrumentality, and valence. Expectancy is the belief that the effort exerted will ultimately allow the person to attain the desire outcome. Instrumentality is the belief that a reward will be obtained resulting from the outcome of behaving in a certain way. Valence is the value placed on a reward by people depending on their needs, goals, and values. All three of these parts work in concert to determine an individual's motivation. If a person believes that behaving a certain way will foster achievement of an outcome (expectancy), that a reward will be given as a result of that behavior (instrumentality), and that the reward obtained is of high value (valence), motivation for this behavior will be high.

Three Needs Theory, created by McClelland (1961) identifies three main motivators that drive behavior in all people. These three motivators are: need for achievement, need for affiliation, and need for power. Need for achievement is a motivating force directed towards setting and accomplishing meaningful goals. Need for affiliation motivates one to belong to the collective group, to be liked, and to collaborate rather than compete with others. Need for power motivates people to control and

influence others while obtaining status and recognition among their peer group. Depending on the personal experiences and values of people, one of these motivators will be more dominant than the others. This theory maintains that the dominant motivator will determine what motivates people and how motivated they are given situational conditions.

One popular conceptualization of motivation divides the construct into two parts: intrinsic and extrinsic motivation (Ryan & Deci, 2000). Intrinsic motivation is the self-driven desire, innate or learned, to behave in a given way due to an interest or enjoyment in the task itself. Those who are intrinsically motivated behave in a certain way because they enjoy it or because they appreciate and desire the internal growth they will obtain from behaving in a given way in lieu of external rewards (Deci, 1971). Intrinsic motivation exists within a person rather than being driven by external pressures (Centers & Bugental, 1966). In fact, prior research has shown that presenting an external reward to someone already engaging in an intrinsically motivating activity actually decreases intrinsic motivation (deCharms, 1968). As an example, people who are intrinsically motivated to become scientists will be motivated by their internal curiosity to learn about organisms, cells, etc., rather than the expected salary for someone in that position.

On the other hand, extrinsic motivation drives behavior via the desire to attain an outcome coming from outside pressures rather than internal pressures (Centers & Bugental, 1966). Those who are extrinsically motivated are solely motivated by the tangible reward they can obtain by behaving in a certain and not by internal forces driving them to behave. Using the previous example of a scientist, a person who is extrinsically motivated to become a scientist would be motivated by the potential salary

or praise from colleagues that comes along with attaining such a position. These two types of motivation, intrinsic and extrinsic, will be the focus of the current research going forth.

Given this review of motivation, it is now appropriate to drill down a little deeper into the role motivation will play in the present research. I will be looking to detail and expand upon the role motivation plays in a job analysis.

Understanding how motivation operates in the context of job analysis can allow practitioners to optimize conditions, effectively fostering increased motivation for raters, incumbents, and/or subject matter experts. Increasing the motivation of raters in a job analysis can be of paramount importance to the output produced from the job analysis process. This sustained motivation throughout the job analysis process enables raters to provide full and thorough ratings that help to paint an accurate picture of the job being analyzed. Conversely, utilizing raters who are unmotivated can result in less useful job related information due to their lack of drive and energy towards the end goal (Morgeson & Campion, 1997).

Through the usage of the Intrinsic Motivation Inventory (IMI) (shown in Appendix A), I will be able to examine various relationships between motivation and other variables within the context of a job analysis. This measure in particular was chosen because of the increased work effort levels demonstrated by those high in intrinsic motivation versus those low in intrinsic motivation via various empirical studies (Dysvik and Kuvaas, 2013; Gagne and Deci, 2005). This is in contrast to the disagreement in the literature regarding how extrinsic motivation impacts work effort (Dysvik and Kuvaas,

2013). While it has been shown that stimulating extrinsic motivation can increase the quantity of work output, the levels of work quantity do not increase accordingly (Jenkins, Mitra, Gupta, & Shaw, 1998). Therefore, developing a greater understanding of how intrinsic motivation operates within a job analysis through the usage of the IMI will accomplish a couple of things. First, this study will look to determine situational conditions where intrinsic motivation is higher or lower, thus directing practitioners' efforts to stimulate motivation in those taking the questionnaire. Moreover, use of the IMI will uncover insights that will help practitioners incite motivation in raters that will not only increase the levels of effort put forth by raters, but also the quality of the work. As a result, this high quality work will, theoretically, lead to more accurate questionnaire responses which will eventually pave the way for supported and justified organizational initiatives in the future.

Job Analysis

As mentioned previously, the job analysis process helps to define the requirements of a particular job. The initial step in a job analysis is for incumbents or subject matter experts to complete a questionnaire, which is the focus of the present study. This questionnaire allows the incumbent to detail the job duties, responsibilities, and work environment for the job being analyzed.

The job analysis questionnaire can take many different forms, as there are many instruments/classification systems available for practitioners to analyze jobs. For the purposes of this paper, it is useful to highlight some of these instruments to better understand past job analysis research.

The Fleishman Job Analysis Survey (F-JAS) contains a taxonomy of 52 abilities that are rated on the level of ability needed for a given job in order to specify job requirements (Fleishman & Mumford, 1991). This measure has been validated by many studies, resulting in its use for different purposes in the workplace. The F-JAS can applied in a number of ways in a variety of work settings for a wide range of jobs (Caughron, Mumford, & Fleishman, 2012).

Another job analysis instrument used frequently in past research is the Position Analysis Questionnaire, or PAQ (Arvey & Begalla, 1975). The PAQ relates job characteristics to personal characteristics on categories such as: information input, mental processes, relationships, etc., in order to define a job. The PAQ has been utilized in many past research studies (Arvey & Begalla, 1975; Sparrow, 1989), resulting in a database of jobs based on aggregated PAQ data.

Additionally, the Functional Job Analysis (FJA) has been used as a scale to classify jobs. The FJA helps collect information about what workers do on the job by asking questions on scales such as: things, data, people, and worker instructions (Olson, Fine, Myers, & Jennings, 1981). Despite its past usefulness, the FJA has been surpassed in recent years by other scales, most specifically, the O*NET Abilities and Work Styles questionnaire.

The O*NET scale is of particular interest to this study because content from this scale will be used in examples that will be presented to participants. The O*NET questionnaire describes jobs by looking at abilities, which are enduring traits that allow a person to do a job, as well as work styles, which are personal characteristics that affect

how someone does a job (O*NET, n.d.). This questionnaire then asks how important a given ability/work style is to a given job, as well as what level of this ability/work style is needed for the job in order to be a competent worker. Moreover, for the purposes of this study, the variable job complexity will be operationalized via O*NET's Specific Vocational Preparation score or SVP that is associated with the current job title of the respondents. Specific Vocational Preparation is a component of Worker Characteristics information found in the Dictionary of Occupational Titles, defined as the amount of lapsed time required by a typical worker to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job-worker situation (O*NET, n.d.).

Although the questionnaire, in its many forms as described previously, is an important step in conducting a job analysis, it is just one piece of the process as a whole. Following this initial step, a job analyst will conduct interviews with job incumbents in order to delve deeper into the information obtained from the incumbent questionnaire. These interviews will allow job analysts to probe incumbents to go beyond what was expressed in various aspects of the questionnaire. From this process, specifications about the position of interest can be determined by the job analyst and lead to the creation of a job description. This resulting job description can be later leveraged by human resource departments when rolling out various initiatives such as determination of pay grades, identification of training needs, evaluation of incumbent performance, and establishment of minimum selection criteria.

Information Processing Strategies

A major reason for the loss of rater motivation in job analysis is the requirement of raters to consider a large amount of information when analyzing the job in question. Two information processing strategies, decomposed and holistic, have been leveraged in job analyses in order to present this information differently to raters. In order to more fully detail the properties that differentiate each of these information processing strategies, an outline of each strategy is necessary.

The process of decomposition breaks the job into major tasks or components that have been determined to be the most important pieces making up the job as a whole. To better illustrate what a decomposed job analysis looks like in comparison to a holistic job analysis, consider the following example that uses the job of college professor as the object of the job analysis. For the position of college professor, a decomposed job analysis would break the job down into its major tasks or components, such as: administrative duties, research duties, and student instruction duties. After the job is broken into parts, the necessity and extent of utilization of various abilities and work styles (e.g. manual dexterity, oral comprehension, etc.) is determined for each of these job components individually. After ratings are collected for each component, these ratings are combined to form a description of the college professor position overall. The process of decomposition allows raters to make judgments about smaller portions of the job, enabling them to consider less information at one time than they would if they were rating the job holistically. Moreover, this more targeted approach to job analysis allows raters to take into account more factors than they would when making holistic judgments as they would feel less overwhelmed (Armstrong, Denniston, & Gordon, 1975).

On the other hand, a holistic job analysis requires raters to assess the necessity and extent of utilization of various abilities and work styles (e.g. manual dexterity, oral comprehension, etc.) for the job as a whole via one rating as opposed to rating individual job components as is the process for a decomposed job analysis. When rating a job holistically, it may be difficult for the rater to consider all the information required to provide ratings regarding an entire job at once. This cognitively complex task of considering a large amount of information when making judgments can prove to be detrimental to the accuracy of ratings as research shows there are cognitive limitations on the number of conceptual units a human can consider simultaneously (Miller, 1956). The cognitive overload caused by holistic judgments can prove to be demotivating to raters and their answers can become incomplete or inaccurate because they are not putting forth the cognitive effort to consider all information available to them (Butler & Harvey, 1988). In an effort to reduce the cognitive load that job analysis places on raters, research has pointed to the decomposition of questions or problems into smaller pieces and parts that can be rated individually and then recombined to create an overall judgment (Armstrong et al., 1975; Butler & Harvey, 1988; Cornelius & Lyness, 1980; Schumacher et al., 2012).

Some of the earliest support for the decomposition principle came from the research of Armstrong et al. (1975). Their study, which focused on information processing in a general sense and was not specific to job analysis, looked to provide insight into which information processing strategy produces the most accurate ratings. In their study, participants were split into two groups: the first group attempted to solve a question presented holistically and the other group attempted to solve the decomposed

version of the same question. Questions chosen for their study were ones with known, matter of fact answers with no room for interpretation. These included questions related to historical census information, high school retention rates, and tobacco production rates in the United States. In the decomposed condition, questions were broken up into smaller question parts that were determined to be equally relevant, important, and useful in solving the original problem. Respondents were to use these question parts to aid in solving the original question. Results of their study found that decomposing a problem into smaller parts and later aggregating them to produce a singular answer them led to more accurate estimations of the correct answers to the overall problem in 12 out of 13 trials, thus showing that accuracy is superior through the usage of the decomposition strategy. My research will look to expand on the work by Armstrong et al. (1975) by capturing how motivated participants are to complete a task using these two strategies: holistic and decomposed.

More directly related to the job analysis process, Butler and Harvey (1988) looked to provide support for the equality of accuracy between holistic judgments and decomposed judgments in order to reduce the cost and intrusiveness of the Position Analysis Questionnaire (PAQ). Their study had three groups of raters (graduate students, undergraduate students, and professional job analysts) make holistic ratings on the PAQ dimensions for four familiar jobs. In order to determine the accuracy of these ratings, the holistic ratings were then compared to decomposed ratings made by professional job analysts. Results showed that the raters, including a group of professional job analysts, were not able to make holistic ratings that were as accurate as the decomposed ratings given by professional job analysts. These findings provided further support for the utility

of the decomposition principle when making judgments. Additionally, these results extended support for decomposition in judgment situations to the domain of job analysis.

Further investigating these two information processing strategies, Cornelius and Lyness (1980) looked to compare the job analysis data quality between holistic and decomposed judgments. It was hypothesized that decomposed judgments would be superior to holistic judgments in obtaining overall job ratings. In this research, job incumbents were asked to complete various job analysis rating scales for their own job on two occasions, using either a holistic strategy or a decomposed strategy. Pearson correlations were then calculated between the ratings of the job incumbents and standard ratings of job analysts and job supervisors. Results showed that the decomposed judgment strategy produced job analysis ratings of comparable quality to the holistic judgment strategy.

More recently, Schumacher et al. (2012) looked to examine the accuracy of job analysis ratings on the Fleishman Job Analysis Survey (F-JAS) utilizing job incumbents and job laypeople as raters. Half of the incumbent group rated the job in question (paramedic) holistically, while the other half rated the job using decomposition. The same methodology was used for the group of laypeople. The accuracy of participant ratings was then compared against expert consensus ratings. The results found a significant interaction between job experience and information presentation. More specifically, it was shown that the decomposed strategy led to more accurate ratings by laypeople whereas the holistic strategy produced more accurate ratings for job incumbents. These findings were unique from previous research showing that the utility of a decomposed

strategy depends on the job experience of the rater, therefore tempering the idea that using decomposition across all situations produces more accurate ratings.

Given the ambiguous support in the literature for each strategy, I will look to further examine the contrast between holistic and decomposed information processing via the motivation perceptions associated with each strategy. Providing evidence of increased motivation in one information processing strategy over the other can have great implications for practitioners. Considering the relationship between motivation and accuracy of job analysis ratings demonstrated by Morgeson and Campion (1997), with the support of past empirical studies, their research has suggested that determining situational conditions in which raters are more motivated, therefore providing more accurate ratings, can direct implementation of information processing strategies in job analysis. If raters are consistently significantly more motivated in one condition over another, I can suggest that the accuracy of these ratings will also be superior, leading to more useful output. This thesis will look to examine the variation in motivation within an incumbent sample when holistic and decomposed information processing strategies are used. Given the support for incumbents succeeding when utilizing the holistic information processing strategy to rate jobs and because of the assumption that raters will enjoy completing the shorter measure between the two strategies, I hypothesize:

Hypothesis 1: Participants will be more motivated to accurately complete a holistic job analysis than a decomposed job analysis

As discussed previously, Schumacher et al. (2012) found that job experience (incumbent vs. layperson) significantly interacted with information processing strategy (holistic vs. decomposed) in relation to motivation. The reason given for this interaction

was that the cognitive processes of job incumbents are more aligned with the holistic strategy than the decomposed strategy, resulting in more accurate ratings for the former. In order to build upon these findings, this research looks to examine how a measure characterizing the degree of cognitive faculties needed for a given job, in this case job complexity, can moderate the relationship between information processing strategy and motivation.

Job Complexity

Work complexity can be characterized by a job that is mentally challenging and requires the usage of multiple skills. The complexity of one's everyday work can influence the manner in which information is organized when encountering difficult problems and situations. Complex work can be more demanding due to the unforeseen obstacles that arise, which require more personal initiative and judgment than less complex work might (Chung-Yan & Butler, 2011).

In the literature, a positive relationship has been found between work complexity and work motivation, among other important work-related variables (Dunnette, 1991; Humphrey, Nahrgang, & Morgeson, 2007). Considering the cognitive complexity of the job analyses process, and more specifically, the job analysis questionnaire, those with more complex jobs will be more accustomed to this type of complex thought and thus see the process as being less difficult. More specifically, given the perception that the decomposed information strategy is more difficult, those more equipped to handle cognitively demanding work will be more motivated. This motivation will result from the enjoyment of doing tasks one is comfortable with, as well as the internalization that

participating in difficult work will foster personal growth. Therefore, as job complexity increases, motivation to accurately complete a decomposed job analysis will increase. I expect the differences in motivation across both information processing strategies to decrease in magnitude as job complexity increases (shown in Figure 1). As job complexity increases, the rater's ability to counteract the difficulties presented by decomposition will increase as well. Given the regularity with which an incumbent in a complex job deals with cognitively demanding work, motivation will increase as cognitively demanding situations arise. Therefore I hypothesize:

Hypothesis 2: Individuals will be more motivated to accurately complete a holistic job analysis than a decomposed job analysis; this effect will be less pronounced as job complexity increases

Perceived Task Difficulty

As detailed earlier, participating as a rater in a job analysis is a cognitively demanding task that can prove to be quite difficult for some. The perceived difficulty of a task may impact rater effort, expectations, and task motivation. According to Horvath, Herleman, and McKie (2006, p. 171), "Perceived task difficulty refers to one's beliefs regarding how much effort would be needed to succeed at a task, and whether success is even possible." It has been shown previously that perceptions of task difficulty can lead to mixed results. In Vroom's Expectancy Theory (Vroom, 1964), perceived task difficulty manifests itself in the expectancy component. In this component, performance expectations that are perceived as too difficult lead to the tempering of the belief that one's effort will result in attainment of desired performance (Van Eerde & Thierry, 1996). These perceptions of exceedingly difficult performance expectations effectively decrease motivation because the person believes that regardless of the effort exerted, the desired

result is unattainable. Additional research has found increased task difficulty leads to the tempering of task engagement and task performance as the heightened pressure can be unpleasant and undermine confidence (Ajzen, 2002; Manderlink & Harackiewicz, 1984; Mossholder, 1980). However, Locke and Latham (1990) found that goals that are perceived as difficult promote more pressure to excel resulting in greater effort.

The present study will look to apply these principles to the task of job analysis by examining how the variation in information processing strategies utilized can impact perceived task difficulty. Uncovering a relationship between these information processing strategies and perceived difficulty can assist practitioners in countering these effects when employing their own job analysis. Job incumbents have shown a propensity to prefer processing information holistically as it more closely resembles their thought process while on the job (Schumacher et al., 2012), so I expect them to perceive this strategy as less difficult. Additionally, I expect this pattern to become more pronounced as job complexity increases, effectively increasing the on-the-job thought complexity (illustrated in Figure 2). Accordingly, I hypothesize:

Hypothesis 3: Decomposed job analysis tasks will be perceived as more difficult to rate by respondents than holistic tasks; this effect will be more pronounced as job complexity increases

Self-Efficacy

Self-efficacy is a judgment of how well a person can execute various courses of action in a given situation (Bandura, 1982; Bandura, 1997). This definition of self-efficacy that has been widely studied throughout the literature deems the construct to be situation specific, earning the acronym SSE (situation specific self-efficacy) (Gist &

Mitchell, 1992; Lee & Bobko, 1994). In other words, this definition of SSE postulates that self-efficacy judgments can vary based upon the conditions of a particular task or situation. This limitation on the initial definition of self-efficacy has led researchers to shift their focus to a more robust construct called generalized self-efficacy or GSE (Gardner & Pierce, 1998). GSE, which is defined as "one's belief in one's overall competence to effect requisite performances across a wide variety of achievement situations" (Chen, Gully, & Eden, 2001, p. 63), effectively captures the tendency of individuals to deem themselves capable of meeting task demands in a wide array of situations. It has also been suggested that generalized self-efficacy is more trait-like and resistant to short term influences than SSE is (Eden, 1988). Given the broad topic of job analysis and the various situations encountered within the job analysis questionnaire, examining generalized self-efficacy among respondents is most useful for my research.

These generalized self-efficacy judgments have been shown to largely affect behavior, leading people to avoid situations where they believe they would not be able to cope and to embrace situations where they believe they are completely capable of being successful (Bandura, 1997). These intrinsic ratings of self-efficacy also directly influence people's motivation in different situations. If a person believes success is possible across many situations, motivation to participate will increase as well. Conversely, if a person feels less efficacious across situations, less effort will be exerted in order to prevent what seems like inevitable failure. Past research has found support for self-efficacy's causal relationship with task performance, showing its direct and indirect impact on performance (Bandura, 1982; Locke, Frederick, Lee, & Bobko, 1984).

For the purposes of this paper, the effect of generalized self-efficacy on motivation in a job analysis rating situation is most interesting. Given the cognitively demanding nature of job analysis as noted previously, more self-efficacious raters will persist in the face of these demands in an attempt to master the task at hand. Additionally, when situational difficulties arise, those high in generalized self-efficacy will become more motivated to conquer them and they will be used as fuel for success in the task (Bandura, 1977). Conversely, those low in generalized self-efficacy will become filled with doubt regarding their ability to succeed in the task and withhold effort or withdraw it altogether. These people will see difficult obstacles as confirmation of their self-doubt in the situation as opposed to opportunities to overcome and succeed in the task. Given the increased number of absolute ratings and judgments required by the decomposed job analysis, those higher in self-efficacy will be more motivated to persist in the face of these difficulties than those lower in self-efficacy (shown in Figure 3). It is a reasonable assumption that when people are confident in their prospective performance during a task, they enjoy it more than they would if they were not confident in their performance. This follows the logic of "flow," a term created by Csikszentmihalyi (1975) which describes a feeling of overall sensation when fully invested in a task. Those who are more self-efficacious will be more invested in the task at hand than those who are less self-efficacious and therefore be in this motivational flow state. Given this, raters higher in self-efficacy will feel more confident, thus more motivated, when making difficult judgments as is the case with decomposition. On the other hand, raters lower in self-efficacy will be less confident in a cognitively demanding situation, notably tempering their motivation. Therefore, it is hypothesized:

Hypothesis 4: Individuals will be more motivated to accurately complete a holistic job analysis than a decomposed job analysis; this effect will be less pronounced as self-efficacy increases

Need for Cognition

As evidenced earlier, providing ratings for a job analysis can prove to be a cognitively demanding task that demands sustained attention and cognitive effort. Clearly, people who enjoy tasks that push cognitive limits would be more comfortable as raters than someone who would not enjoy such a task. Need for cognition is a construct that measures an individual's tendency to engage in and enjoy effortful cognitive endeavors (Cacioppo, Petty, Feinstein, & Jarvis, 1996). Those high in need for cognition, known as chronic cognizers, enjoy effortful reasoning and problem solving and feel less stressed in these situations than their counterparts, chronic cognitive misers, who are low in need for cognition. Furthermore, those high in need for cognition have an organic desire to seek, acquire, and think about information to make sense of situations whereas those lower in need for cognition rely on social and heuristic cues to make sense of situations (Cacioppo et al., 1996). My research will look to examine the relationship between this construct and job analysis rater motivation. It is expected that those who are higher in need for cognition will have a greater desire to participate in and succeed at the job analysis task across both processing strategies (shown in Figure 4). Given that decomposed job analyses will be seen as more difficult to rate, those higher in need for cognition will enjoy a task of this kind that necessitates increased cognitive effort, and therefore will be more motivated than those lower in self-efficacy. Considering the variation in the desire to participate in cognitively demanding activities, I hypothesize:

Hypothesis 5: Individuals will be more motivated to accurately complete a holistic job analysis than a decomposed job analysis; this effect will be less pronounced as need for cognition increases.

Job Analysis Purpose

As described earlier, job analyses lay the ground work for multiple human resource initiatives throughout an organization by determining the job relatedness of various duties and requirements (Butler & Harvey, 1988; HR Guide, 1998). While there are many uses for the output resulting from job analyses, there has not been much in the literature regarding variation in rater motivation upon learning what the job analysis output will be ultimately used for. My research will focus on just a few of the many initiatives that can be driven by the output of a job analysis. Of those initiatives that are driven by job analysis information, this research will look at: determination of training needs, identification of employee compensation, and evaluation of employee performance.

To further detail how job analysis output contributes to each of these human resource initiatives, some detail is needed. The first job analysis purpose I will examine is determination of training needs. It is important for an organization to be constantly improving and developing the professional talent within the teams and departments companywide in order to facilitate growth. To train employees effectively, it is of paramount importance that training is being conducted in the appropriate areas. A job analysis provides a concrete description regarding which tasks, responsibilities, and competencies are needed for a given position, as well as the relative importance of those tasks, responsibilities and competencies. An organization can leverage this information in order to properly allocate training resources to areas that are critical to job performance

(HR Guide, 1998). If there is a lack of accuracy in the ratings during the job analysis process, this can lead to critical misallocation of training resources (i.e. providing training to incumbents which is not relevant to their job or not enough training in areas where it is needed, as well as adverse impact on the budget).

The next job analysis purpose the study will focus on is the identification of employee compensation. As mentioned previously, a job analysis provides a concrete job description for a given position. Beyond that, a job analysis provides the relative level of proficiency needed in these tasks, responsibilities, etc., which is critical to determining organization-wide compensation models. Knowledge of what level of expertise is needed for various skills and abilities allows compensation departments within organizations to benchmark against other occupations with similar job requirements (HR Guide, 1998). This point of reference gives context regarding how to compensate an employee in a particular position with a given skillset. If ratings from a job analysis are inaccurate, compensation analysts may be basing their decisions upon skills that are not truly critical to the job, therefore inappropriately compensating a job incumbent based on skills that may or may not be relevant for the job.

The last job analysis purpose the study will examine is evaluation of employee performance. After compensating or training employees, it is important for an organization to periodically review the performance of employees against the standards that have been set for their respective positions. The job description resulting from the entire job analysis process serves multiple purposes in the performance evaluation process for an organization. First, knowledge of the specific skills and the extent to which those skills are needed for a given position allows performance standards to be put in

place, providing a definition for how an employee should perform on a given task/dimension (Schumacher et al., 2012). In concert with these performance standards, managers can use the job analysis output to help flesh out what goals should look like for an employee in a given position. Incomplete or inaccurate job analysis output can wreak havoc on the performance evaluation process in many ways, including the implementation of unrealistic standards and goals related to the skills and competencies required for a job.

Given the aforementioned uses for job analysis information, I want to examine how motivation varies amongst raters completing a job analysis questionnaire for the various purposes addressed previously. Since a subscale of the Intrinsic Motivation Inventory will be used, I would expect purposes that stimulate raters who are more driven by internal forces will have a higher motivation score. One job analysis purpose being examined in this study falls into this category, as personal development and improvement (e.g. in determination of training needs) is largely driven by internal forces (Colquitt, Lepine, & Noe, 2000; Noe, 1986). While the training requirements themselves are an external factor, the force that drives employees' desire to have an active role in their personal and/or professional improvement comes from internal factors. Conversely, two of the job analysis purposes are largely driven by external forces (e.g. performance evaluation/goals and compensation). As mentioned earlier, given that the motivation measure in this study gauges intrinsic motivation, I expect raters who are intrinsically motivated to score higher in situations driven by internal forces as opposed to those driven by external forces. Therefore, I hypothesize:

Hypothesis 6: Respondents will be significantly more motivated to complete a job analysis for the purpose of determining training needs over and above the other two job analysis purposes

CHAPTER II

METHOD

Method

Participants

The final sample that was used to test the hypotheses was made up of 198 participants, 56% of respondents were in the 18-34 year old age group and 21% were in the 35-44 year old age group. These respondents were Mechanical Turk "Workers" who chose to complete the HIT (Human Intelligence Task) containing the questionnaire and subsequently passed screener and attention check questions. The three screener questions utilized ensured that our respondents were: 18 years of age or older, residents of the United States, and currently employed. Participants were considered employed if they had a job requiring at least 40 hours of work per week. If respondents did not meet all three of these requirements, they were disqualified from the survey. In addition to screener questions, three attention check questions were employed throughout the survey. These questions instructed the respondents to select a given answer based on the question text, thus ensuring that they were actually reading the content and not giving random answers. If respondents responded incorrectly to any of these three attention check

questions, they were able to complete the survey, but their data were omitted from the final dataset used for analysis. Respondents that passed the screener questions and correctly responded to all three attention check questions were compensated $0.50 and able to proceed with the rest of the survey.

Procedure

In order to provide visual support for the following procedure, Appendix B shows how information was presented to respondents. All respondents were provided information covering what a job analysis is in a general sense. This gave a basic knowledge of the methods used to collect job analysis data, what job analyses can be used for, etc. Then, the two types of information processing strategies used in a job analysis (holistic and decomposed) were thoroughly explained using questions from O*NET as aids in examples differentiating the two strategies. Respondents were told to rate the following questions as if they were completing a job analysis for their own job.

First, respondents were asked to rate how difficult it would be to accurately complete a holistic job analysis for their own job. Then, they were asked how motivated they would be to accurately complete a holistic job analysis of their own job. Delving further into their motivations, they were asked how motivated they would be to accurately complete one type of job analysis (decomposed or holistic) for their own job across the three job analysis purposes (determination of training needs, identification of employee compensation, and evaluation of employee performance). In order to combat order effects, the order in which these purposes are presented to each respondent were randomized. The previous steps were then repeated, but in reference to the type of job analysis not asked about previously (holistic or decomposed). In order to combat order

effects, a counterbalanced measures design was also used across the two question groups referencing holistic and decomposed information processing. At random, some respondents answered questions regarding holistic processing first then moved on to questions regarding decomposed processing. Likewise, some respondents answered questions regarding decomposed processing first then moved on to questions regarding holistic processing.

After both information processing strategies were rated in terms of motivation, respondents were given the self-efficacy measure and then the need for cognition measure. Lastly, respondents were asked to identify their current job title as this was used to cross-reference with occupations in O*NET to determine job complexity via the SVP scores. To ensure accuracy of the coding, a second graduate student determined the appropriate SVP score for each job title. Cohen's kappa was calculated as a measure of inter-rater agreement between both sets of ratings.

In summary, measures of job complexity, generalized self-efficacy, and need for cognition were the between-subjects variables. Conversely, the information processing strategies and job analysis purpose variables were within-subjects.

Measures

Motivation. The seven item interest/enjoyment subscale of the intrinsic motivation inventory (IMI) (Ryan, 1982) was used to measure the dependent variable, motivation, for the present study (shown in Appendix A). Each item was scored on a 5-point scale ranging from 1: not at all true to 5: very true. This subscale is considered the self-report measure of intrinsic motivation within the IMI. The questionnaire has shown

high validity in repeated studies examining its factor loadings related to internalized motivation and task interest (Choi, Mogami, & Medalia, 2010). Additionally, this measure has been shown to be reliable (α = .80) (Mcauley, Duncan, & Tammen, 1989).

Self-efficacy. To measure the between-subjects variable self-efficacy, the new general self-efficacy scale (NGSE) created by Chen et al. (2001) was utilized (shown in Appendix C). A 5-point response format with anchors 1: Strongly disagree and 5: Strongly agree, was used. An average across these eight items results in a self-efficacy score. In the original study, high internal consistency reliability was reported for this measure (α = .86 and .90). Additionally, evidence of high content validity was found when the NGSE was compared to another measure of self-efficacy, the general self-efficacy scale (SGSE) created by Sherer et al. (1982). In this comparison, a higher percentage of items on the NGSE were consistent with the construct of self-efficacy than the items on the SGSE were.

Perceived task difficulty. In their original study, Horvath et al. (2006) designed four items (α = .89) to measure perceived task difficulty in accordance with conceptualizations of the construct detailed in the literature review. These items demonstrated face validity based upon the conceptualization of perceived task difficulty in the original research. Two of these items were used to measure perceived task difficulty, a dependent variable in this study, which are shown in Appendix D. These items range on a 5-point scale from easy to difficult. These two items in particular were chosen from the original four because they were most adaptable to the purposes of my study. Each of the original items referred to perceived difficulty of a college course. One of the items measured course difficulty in terms of self-perceptions and the other in terms

of the perceptions of one's peers. Given that job analyses are completed by raters as well as their peers, replacing the object from the original study, college course, with the task of job analysis made sense in helping to measure difficulty for the purposes of this study.

Need for cognition. The between-subjects variable need for cognition was measured using Cacioppo and Petty's (1982) 18-item Need for Cognition Scale (shown in Appendix E). This scale asks individuals to rate the extent to which they agree with each of 18 statements about the satisfaction they gain from thinking. Items were rated on a five point scale from 1: strongly disagree to 5: strongly agree. A score for NfC is the average of all 18 items, after reverse scored items are recoded. Convergent validity of the scale was demonstrated by Cacioppo and Petty (1982) through the confirmation of existing interrelationships between the Need for Cognition scale and open-mindedness as well as overall ACT scores. Discriminant validity was also supported through the examination of correlations between social desirability measures and the Need for Cognition measure, which revealed no co-variation.

Job complexity. To determine a level of the between-subjects variable job complexity, participants provided their current job title. Once obtained, this job title was cross-referenced with the appropriate job in O*NET along with the respective SVP (Specific Vocational Preparation) score, which was used as their score for job complexity. The scoring scale is shown in Appendix F. A higher SVP indicates an increase in the amount of lapsed time required by a typical worker to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job-worker situation (O*NET, n.d.)

Job analysis purpose. To measure motivation across various proposed usages for job analysis information, a within-subjects variable in the present study, respondents were asked to rate their motivation to complete a job analysis across three situations. To do this, the motivation measure was used across both information processing strategies and all three job analysis purposes (determination of training needs, identification of employee compensation, and evaluation of employee performance). The three aforementioned job analysis purposes were described in-depth during the survey introduction, prior to any ratings being made (Appendix B). These descriptions showed how and why job analysis information ultimately plays a role in the given job analysis purpose.

Job analysis instrument. To illustrate the differences in the within-subjects variable, information processing strategy, content from O*NET Work Styles Questionnaire was used as an aid in the example.

CHAPTER III

RESULTS

Results

While evaluating the data against the assumptions of Multivariate GLM, issues were found with normality, more specifically kurtosis of the overall motivation measures (holistic and decomposed). Shapiro-Wilk tests of normality showed that each of these variables were significantly different from a normal distribution. Additionally, transforming the data into *Z*-scores showed that kurtosis values for each of these variables fell outside of the critical range of ±2. To attempt to correct these issues, transformations of the data were attempted (e.g. inverse, square root, cube). While some of these transformations fixed the issues with kurtosis, they then created issues with skewness. It was decided that data analysis would proceed with the untransformed data.

Overall, there were 311 responses to the survey, 113 (36% of all responses) of which were thrown out due to failure to pass screener questions or attention check questions as well as failure to provide appropriate information linking their responses to their Mechanical Turk account. After filtering out respondents who did not pass screener or attention check questions, the final sample size was 198. Job complexity scores were

calculated by taking the average of two sets of ratings, completed by the researcher and another graduate student. The Kappa statistic which was calculated as a measure of agreement indicated strong agreement between both rating sets (k=.747). All of the variables of interest in this study, and their respective means and standard deviations are displayed in Table 1. The correlation matrix of all variables (also shown in Table 1) was examined to look for possible covariates; no significant correlations were found between potential covariates and the study's dependent variables.

In order to test the hypotheses of interest in this study, repeated measures general linear models and repeated measures *t*-tests were conducted.

Hypothesis 1: Participants will be more motivated to accurately complete a holistic job analysis than a decomposed job analysis

For this hypothesis, the dependent variable was the motivation score determined by rater performance on the intrinsic motivation inventory interest/enjoyment subscale. The predictor was the within-subjects variable, information processing strategy. To provide support for this hypothesis, a significant main effect of information processing strategy on motivation needed to be found.

To test Hypothesis 1, a repeated measures *t*-test was conducted. The *t*-test found a significant difference between information processing strategy groups on motivation, $t(197)= 2.24$, $p=.026$. The effect size for this analysis ($d=.158$) indicates a small effect. As Figure 5 illustrates, participants were more motivated in the holistic condition than those in the decomposed condition ($M_{\text{Holistic Motivation}}= 2.76$; $M_{\text{Decomposed Motivation}}=2.63$), thus supporting Hypothesis 1.

Hypothesis 2: Individuals will be more motivated to accurately complete a holistic job analysis than a decomposed job analysis; this effect will be less pronounced as job complexity increases.

For this hypothesis, the dependent variable was the motivation score determined by rater performance on the intrinsic motivation inventory interest/enjoyment subscale and the predictors were the between-subjects variable, job complexity as well as the within-subjects variable, information processing strategy. To provide support for this hypothesis, a significant interaction between job complexity and information processing strategy in relation to motivation needed to be found.

To test Hypothesis 2, a repeated measures general linear model was conducted. These results, shown in Table 2, did not reveal a significant interaction between job complexity and information processing strategy on motivation. Given these results, Hypothesis 2 is not supported. The accompanying regression coefficients for this hypothesis are shown in Tables 3 and 4.

Hypothesis 3: Decomposed job analysis tasks will be perceived as more difficult to rate by respondents than holistic tasks; this effect will be more pronounced as job complexity increases

For this hypothesis, the dependent variable was the perceived difficulty score derived from the two item measure and the predictors were the within-subjects variable, information processing strategy as well as the between-subjects variable, job complexity. To provide support for this hypothesis, a significant interaction between job complexity and information processing strategy in relation to perceived difficulty needed to be found.

To test Hypothesis 3, a repeated measures general linear model was conducted. These results, shown in Table 5, did not reveal a significant interaction between job

complexity and information processing strategy on perceived difficulty. Additionally, a repeated measures t-test was conducted to test for significant differences between information processing strategy groups on perceived difficulty. This *t*-test indeed found significant differences between information processing strategies, $t(197) = -2.95$, $p = .004$. The effect size for this analysis ($d = .208$) indicates a small effect. These significant differences are illustrated in Figure 5, showing that the decomposed strategy was rated as being more difficult to rate than the holistic strategy. Given these results, Hypothesis 3 is partially supported. The accompanying regression coefficients for this hypothesis are shown in Tables 6 and 7.

Hypothesis 4: Individuals will be more motivated to accurately complete a holistic job analysis than a decomposed job analysis; this effect will be less pronounced as self-efficacy increases.

For this hypothesis, the dependent variable was the motivation score determined by rater performance on the intrinsic motivation inventory interest/enjoyment subscale and the predictors were the between-subjects variable, generalized self-efficacy as well as the within-subjects variable, information processing strategy. To provide support for this hypothesis, a significant interaction between self-efficacy and information processing strategy in relation to motivation needed to be found.

To test Hypothesis 4, a repeated measures general linear model was conducted. These results, shown in Table 8, did not reveal a significant interaction between self-efficacy and information processing strategy on motivation, thus failing to find support for Hypothesis 4. The accompanying regression coefficients for this hypothesis are shown in Tables 9 and 10.

Hypothesis 5: Individuals will be more motivated to accurately complete a holistic job analysis than a decomposed job analysis; this effect will be less pronounced as need for cognition increases.

For this hypothesis, the dependent variable was the motivation score determined by rater performance on the intrinsic motivation inventory interest/enjoyment subscale and the predictors were the between-subjects variable, need for cognition as well as the within-subjects variable, information processing strategy. To provide support for this hypothesis, a significant interaction between need for cognition and information processing strategy in relation to motivation needed to be found.

To test Hypothesis 5, a repeated measures general linear model was conducted. These results, shown in Table 11, did not reveal a significant interaction between need for cognition and information processing strategy on motivation, thus failing to find support for Hypothesis 5. The accompanying regression coefficients for this hypothesis are shown in Tables 12 and 13.

Hypothesis 6: Respondents will be significantly more motivated to complete a job analysis for the purpose of determining training needs over and above the other two job analysis purposes

For this hypothesis, the dependent variable was the motivation score determined by rater performance on the intrinsic motivation inventory interest/enjoyment subscale and the predictor was the within-subjects variable, job analysis purpose. To provide support for this hypothesis, a significant main effect of job analysis purpose on motivation needed to be found. Furthermore, analyses needed to reveal an effect of determination of training needs over and above the other two job analysis purposes.

A repeated measures general linear model was conducted to test Hypothesis 6. Using the Greenhouse-Geisser correction due to a failed Mauchly's test, this analysis

showed a significant effect of job analysis purpose on rater motivation, $F(1.63, 321) = 17.71$, $p=.000$. The effect size for this analysis ($\eta^2_p=.131$) indicates a medium effect (Miles & Shevlin, 2001). This significant effect (shown in Table 14) means at least one of the job analysis purposes was significantly different from the others. However, post-hoc tests revealed that respondents were significantly more motivated in the Determining Employee Compensation condition over and above the other two job analysis purpose conditions, as shown in Figure 6, thus failing to provide support for Hypothesis 6.

CHAPTER IV

DISCUSSION

Discussion

This study contributes to the job analysis literature by providing a deeper look into one of the sources of inaccuracy in job analysis, motivation, as cited by Morgeson and Campion (1997). The present research accomplished this by directly examining rater motivation and possible moderators across both information processing strategies, holistic and decomposed. While past research on motivation in job analysis has been more general, the research presented here allows for different conclusions to be made about rater motivation depending on the information processing strategy leveraged in the job analysis administration.

One of the significant findings here was that job analysis raters are more motivated when the job is presented in a holistic way as opposed to a decomposed way. This was expected based upon the study done by Schumacher et al. (2012), which found that job incumbents gave more accurate ratings than job laypeople when using the holistic strategy but the inverse was true for the decomposed strategy. By tying these results together with the assertion by Morgeson and Campion (1997) that more accurate

means more motivated, I expected our sample, composed entirely of incumbents, would be more motivated in the holistic condition than the decomposed condition. Given these findings, this study shows that not only do job incumbents complete holistic job analyses with a higher level of accuracy, as shown by Schumacher et al. (2012), but they also feel more motivated to complete a holistic job analysis. The connection between the two studies strengthens the case for the positive correlation between motivation and accuracy as suggested by Morgeson and Campion (1997). These findings effectively expand knowledge about the job analysis respondent, particularly as it pertains to job incumbents, which is important because job incumbents are typically the target population for job analysis questionnaires.

Additionally, perceived difficulty of the job analysis questionnaire format in conjunction with motivation was examined here. Perceived difficulty of each strategy seemingly had not been examined much in past literature. The lack of research in this area has implications for practitioners when implementing a questionnaire that raters see as more difficult. Due to the increased amount of ratings needed to complete a decomposed analysis, I expected our sample to be less motivated due to the absolute amount of effort needed. The findings here supported that hypothesis with respondents indeed perceiving job analysis questionnaires presented using a decomposed strategy as more difficult than questionnaires presented in a holistic way. Although I expected this effect due to the pure amount of ratings required by the decomposed strategy, this relationship should be investigated further to examine if anything beyond pure workload makes the decomposed strategy seem more difficult.

Moreover, this study examined rater motivation across various job analysis purposes, another facet of job analysis research not conducted previously. It was hypothesized that respondents would be most motivated for the job analysis purpose of determining employee training needs. Given that a subscale of intrinsic motivation was used, it was proposed that the most intrinsically driven purpose would lead to the highest level of motivation. Results presented in this study found that motivation is not uniform across the three purposes that were examined, thus showing that raters could be more(less) motivated depending on how the job analysis information will be used. Although results showed that the three job analysis purposes were not equally motivating, determining employee training needs was not the most motivating purpose, which was unexpected. In fact, determining employee compensation was the most motivating factor, which is not a totally farfetched finding given that pay/compensation is sometimes a priority of employees. This is a curious finding though, given that the measure used here was one of intrinsic motivation and pay would be an external motivator. Future studies should look to utilize different motivation measures and investigate if this pattern still exists. Additionally, other purposes should be examined to form a more full picture of how they affect motivation. As will be discussed later, this is a notable extension of the current research.

Lastly, despite the significant findings described previously, a moderating effect of self-efficacy, need for cognition, or job complexity did not come to fruition. Given the various ways to operationalize these constructs, perhaps variations in how these variables are measured in future studies could unveil potential significant effects. Although nothing was found in the present study, the suggestions made here based upon the literature

review can help guide future studies when examining how a relationship between these variables looks.

Practical Implications

Given the results presented here, practitioners can utilize these findings to increase their awareness and understanding of the questionnaire respondent and make the necessary adjustments to drive optimal results. More specifically, results from this study can be integrated into practice by those administering job analysis questionnaires.

First, the demonstrated disrepancy in motivation between each information processing strategy (holistic and decomposed) can act as a cue for practitioners to stimulate motivation in job analyses where the lesser motivating strategy (i.e. decomposed) is used. Stimulating motivation in respondents when the decomposed strategy is used to analyze a job can help to minimize possible motivation loss which can ultimately lead to inaccurate responses/information. Respondent motivation can be increased by emphasizing the critical role played by job analysis raters as their responses will be used to eventually drive organizational initiatives. Additionally, motivation could be driven by stimulating internal interest of participants in the job analysis task. This can be done by highlighting the increased understanding they will gain regarding their job and the entire job analysis process, which they may have never been exposed to previously.

Instead of stimulating motivation in the lesser motivating situation, practitioners can also use the findings of this study to switch strategies used in the analysis prior to administration, namely, switching from decomposed to holistic. This can be a viable

option for organizations who do not have the available resources (e.g. time) to take the lengths to stimulate motivation and level the playing field between both strategies. Based on the results of this study, switching from decomposed to holistic will result in more motivated raters who see the analysis as less difficult. This change in information presentation will increase motivation and in theory, increase accuracy of the results.

Lastly, this study has implications for how those administering job analysis questionnaires are framing the process during administration. More specifically, the results in this study demonstrated that the purpose given to respondents for their participation in the analysis can differentially affect motivation. This study looked at three different purposes, revealing that respondents were most motivated when their participation would go towards determining employee compensation. Similar to the suggestions presented for stimulating motivation based on the lesser motivating information processing strategy, the same steps could be taken for the job analysis purpose (e.g. emphasizing criticality of participation or providing incentives). This knowledge will allow practitioners to be more aware of which situations are more/less motivating to the respondents and they can stimulate motivation accordingly. Notably, it would not be advised to change the stated purpose for job analysis participation solely to increase rater motivation, as this would be unsavory and create mistrust between administrators and raters. As will be discussed later, a more fully formed picture of how job analysis purposes affect motivation should be the next step for researchers. This can be accomplished by testing different purposes outside of the three utilized in this study.

Limitations

While there were clear, actionable results obtained from this research, a few limitations to this study should be mentioned that can be expanded upon by future researchers to further support the present findings.

First, job complexity was operationalized using the Specific Vocational Preparation scores found on O*NET. The use of different operationalizations of job complexity could result in a stronger (and possibly significant) relationship with motivation in a job analysis. This might be the case due to how Specific Vocational Preparation scores are defined. SVP scores are based on the amount of time it takes for an employee to attain average job performance in a given position, whereas other measures of job complexity might have different ways of defining what makes a job complex. Other measures of job complexity might focus more on the work being performed and what the daily duties are, rather than how long it takes to be an average performer. Thus, it is possible that a job that warrants a high SVP score (a more complex job) might be defined as less complex on another scale and therefore, have a different relationship with the variables of interest. The operationalization of job complexity used in this study was based on convenience and what made sense based on the information available. Using a more established and researched measure of job/work complexity can provide researchers with a more robust method of defining job complexity that could lead to different effects or interactions.

Additional limitations stem from this study's conceptualization of motivation and difficulty. This study relied on ratings of perceived motivation and perceived difficulty

from raters regarding their performance while taking a job analysis questionnaire. Given that perceptions may be different than reality, how respondents answer questions regarding their perceptions of motivation and difficulty in a certain situation could be completely different than how they would truly feel when immersed in the situation. It is possible that it is difficult for respondents to estimate how motivated they would be in a situation without actually taking part in a job analysis questionnaire. Prior inexperience with job analysis would make it hard to estimate the situational constraints placed upon raters that would affect motivation and perceptions of difficulty. A study more directly measuring rater motivation/ difficulty perceptions during, throughout, or after completing an actual job analysis questionnaire could further support the conclusions made here or uncover more relationships between variables.

Moreover, this study was limited by the measure used to operationalize motivation, more specifically, intrinsic motivation. The seven item interest/enjoyment subscale of the intrinsic motivation inventory (IMI) was used to assign a motivation score to respondents in the present study. While this is a valid and reputable measure, it limits the generalizations that can be made regarding the study's results. Using a more general measure of motivation can allow for more robust recommendations to be made based upon the results. Additionally, using a measure of intrinsic motivation does not allow for conclusions to be made about how extrinsic motivation behaves in conjunction with any of the variables mentioned in this study. Perhaps while respondents were less motivated intrinsically by the job analysis, there was something external to themselves that was motivating them but was not captured by the measure leveraged here. Using a measure of

extrinsic motivation or general motivation in future studies can help to form a more holistic picture of how motivation operates in a job analysis.

Lastly, the connections between job analysis accuracy and motivation here are theoretical. The conclusions made in this research are largely tying results found here to research relating to accuracy by Morgeson and Campion (1997), who noted motivation loss as a source of inaccuracy in job analysis. Moreover, I am proposing that by increasing motivation in raters through the methods above, the accuracy of responses will increase accordingly. More concrete support for these assertions could be provided by conducting a study where actual job analysis participants' responses were evaluated for accuracy and then tied back to their motivation ratings and difficulty perceptions. As an additional caveat, Morgeson and Campion (1997) made their conclusions based upon past research that directly measured motivation whereas the present study dealt with hypothetical motivation. As noted earlier, the possible discrepancy between hypothetical motivation and direct measures of motivation during true job analysis participation should be investigated in order to quell these concerns.

Directions for future research

As shown previously, although there have been significant findings from the present study, future research should look to expand upon the study and further support the results here.

In order to solidify the proposed connection between increased motivation and accuracy, it would be useful to design a study that directly measures rater motivation prior to, during, or following actual job analysis questionnaire administration. A future

study could present job analysis questionnaires to raters, using both information processing strategies, and have them complete the questionnaire. Then, their ratings could be compared to the ratings of expert raters to determine accuracy. These accuracy scores could be coupled with previously captured motivation scores and allow researchers to tie together motivation and accuracy across different information processing strategies. A study such as this could also eliminate another limitation of the current study, which is using hypothetical motivation as the metric for motivation. Measuring rater motivation directly in an actual job analysis in this way would allow the rater to get first hand experience with the process, situational conditions, etc. Hypothetical motivation ratings cannot necessarily capture what a true experience can as the raters must estimate how they would feel in a situation, possibly one they have never been a part of before.

Another future study extending from the current research could look to expand on the effect of job analysis purposes on rater motivation. In the current study, only three purposes were used to determine motivation levels of job analysis raters. Reading into the literature more and deciding what other purposes could be proposed to raters as reasons for their participation can help to form a clearer picture of this effect. Some job analysis purposes that could be candidates for future research could be: determining content for prospective job postings, designing interview questions for future candidates, or development of selection tests during future hiring processes. To accomplish a study such as this, researchers could design a study where raters are placed into multiple groups, with each group being informed that they are participating in a job analysis for varying reasons/purposes, including and beyond those used in the present study. Then, prior to, during, or after job analysis questionnaire administration, rater motivation can be

measured. These motivation scores can then be compared across the different purposes, much as was done in the present study, to examine if certain purposes were more motivating than others. These findings could then be implemented by practitioners to increase motivation in the less motivating conditions as discussed earlier.

Taking a step back into a more general area, future research could look to follow up on the work by Morgeson and Campion (1997) by examining other sources of inaccuracy in job analysis, whether it be cognitive, social, or otherwise. This could be done by researching previously mentioned sources of job analysis inaccuracy, such as: social desirability bias, carelessness, and the halo effect, in concert with interaction effects of other variables. Additionally, this can be done by testing out variables that have not been researched as a possible source of inaccuracy in job analyses. Each of these possible directions can provide a deeper examination into what situational and/or individual characteristics lead to inaccuracy in job analysis can foster a greater awareness amongst researchers and practitioners. This awareness will then allow for action to be taken to minimize inaccuracy in a situation where accuracy is of such great importance.

Overall, the present study was successful in finding that raters are differentially motivated to complete a job analysis based on the information processing strategy leveraged. These findings, which mirror past studies relating to accuracy, support an approach to administering job analyses that is not uniform, but specialized based on the information processing strategy used. This should increase practitioner awareness of conditions when raters will be less motivated, allowing them to account for this and attempt to stimulate motivation. Having this awareness regarding the conditions in which

raters are more motivated can result in results that are accurate and thus more useful for practitioners.

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Tables and Figures

Table 1. Correlations

	Variable	M	SD	Cronbach's α	1	2	3	4	5	6	7	8	9	10	11
1	Age				1										
2	Job Complexity	6.57	1.25		-.15*	1									
3	Holistic Difficulty	2.65	1.04	.87	-.06	.09	1								
4	Decomposed Difficulty	2.92	1.05	.83	.08	.10	.23**	1							
5	Self-Efficacy	4.00	0.65	.94	.03	.02	.03	-.05	1						
6	Need for Cognition	3.50	0.74	.94	.17*	.05	-.02	-.12	.32**	1					
7	Overall Holistic Motivation	2.76	1.08	.94	.02	.00	-.28**	-.08	.10	.13	1				
8	Overall Decomposed Motivation	2.63	1.04	.95	.04	-.04	-.09	-.29**	.09	.12	.70**	1			
9	Training Needs Motivation	2.79	1.01	.96	.05	-.06	-.18*	-.18*	.13	.13	.81**	.82**	1		
10	Employee Compensation Motivation	2.96	1.06	.96	-.00	-.09	-.17*	-.15*	.15*	.18*	.77**	.76**	.82**	1	
11	Performance Evaluation Motivation	2.75	1.00	.96	.02	-.06	-.17*	-.18*	.16*	.16*	.84**	.84**	.92**	.86**	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 2. Results of General Linear Model (Hypothesis 2)

Source	df	SS	MS	F
Holistic vs. Decomposed Information Processing Strategy	1	0.03	0.03	0.09
Job Complexity	1	0.17	0.17	0.09
Job Complexity × Information Processing Strategy	1	0.17	0.17	0.49
Total	195	65.69	0.34	

Notes. Dependent Variable = motivation; *p<.05; Holistic vs. Decomposed Information Processing Strategy is a repeated measures variable; Type III Sums of Squares are reported, such that each effect is shown after partialing out the other effects

Table 3. Regression Coefficients Summary (Hypothesis 2)

Variable	B	Std. Error	t	p
Intercept	2.75	0.41	6.69	.000
Job Complexity	$4.06e^{-5}$	0.06	0.00	.999

Notes. Dependent Variable = holistic motivation; *p<.05

Table 4. Regression Coefficients Summary (Hypothesis 2)

Variable	B	Std. Error	t	p
Intercept	2.85	0.40	7.15	.000
Job Complexity	-0.03	0.06	-0.55	.583

Notes. Dependent Variable = decomposed motivation; *p<.05

Table 5. Results of General Linear Model (Hypothesis 3)

Source	df	SS	MS	F
Holistic vs. Decomposed Information Processing Strategy	1	0.17	0.17	0.20
Job Complexity	1	3.74	3.74	2.82
Job Complexity × Information Processing Strategy	1	0.01	0.01	0.02
Total	195	162.56	0.83	

Notes. Dependent Variable = difficulty; *p<.05; Holistic vs. Decomposed Information Processing Strategy is a repeated measures variable; Type III Sums of Squares are reported, such that each effect is shown after partialing out the other effects

Table 6. Regression Coefficients Summary (Hypothesis 3)

Variable	B	Std. Error	t	p
Intercept	2.16	0.39	5.48	.000
Job Complexity	0.07	0.06	1.25	.214

Notes. Dependent Variable = holistic difficulty; *p<.05

Table 7. Regression Coefficients Summary (Hypothesis 3)

Variable	B	Std. Error	t	p
Intercept	2.38	0.40	5.99	.000
Job Complexity	0.08	0.06	1.38	.168

Notes. Dependent Variable = decomposed difficulty; *p<.05

Table 8. Results of General Linear Model (Hypothesis 4)

Source	df	SS	MS	F
Holistic vs. Decomposed Information Processing Strategy	1	0.00	0.00	0.00
Self-Efficacy	1	3.95	3.95	2.08
Job Complexity × Information Processing Strategy	1	0.05	0.05	0.16
Total	196	67.29	0.34	

Notes. Dependent Variable = motivation; *p<.05; Holistic vs. Decomposed Information Processing Strategy is a repeated measures variable; Type III Sums of Squares are reported, such that each effect is shown after partialing out the other effects

Table 9. Regression Coefficients Summary (Hypothesis 4)

Variable	B	Std. Error	t	p
Intercept	2.07	0.48	4.36	.000
Self-Efficacy	0.17	0.12	1.46	.146

Notes. Dependent Variable = holistic motivation; *p<.05

Table 10. Regression Coefficients Summary (Hypothesis 4)

Variable	B	Std. Error	t	p
Intercept	2.08	0.46	4.51	.000
Self-Efficacy	0.14	0.11	1.19	.235

Notes. Dependent Variable = decomposed motivation; *p<.05

Table 11. Results of General Linear Model (Hypothesis 5)

Source	df	SS	MS	F
Holistic vs. Decomposed Information Processing Strategy	1	0.03	0.03	0.09
Need for Cognition	1	7.05	7.05	3.75
Job Complexity × Information Processing Strategy	1	0.01	0.01	0.03
Total	196	67.34	0.34	

Notes. Dependent Variable = motivation; *p<.05; Holistic vs. Decomposed Information Processing Strategy is a repeated measures variable; Type III Sums of Squares are reported, such that each effect is shown after partialing out the other effects

Table 12. Regression Coefficients Summary (Hypothesis 5)

Variable	B	Std. Error	t	p
Intercept	2.10	0.37	5.66	.000
Need for Cognition	0.19	0.10	1.82	.070

Notes. Dependent Variable = holistic motivation; *p<.05

Table 13. Regression Coefficients Summary (Hypothesis 5)

Variable	B	Std. Error	t	p
Intercept	2.01	0.36	5.60	.000
Need for Cognition	0.18	0.10	1.74	.083

Notes. Dependent Variable = decomposed motivation; *p<.05

Table 14. Results of General Linear Model (Hypothesis 6)

Source	df	SS	MS	F
Job Analysis Purpose	1.63	4.99	3.07	17.71*
Total	320.92	55.55	0.17	

Notes. Dependent Variable = motivation; *p<.05

Figure 1

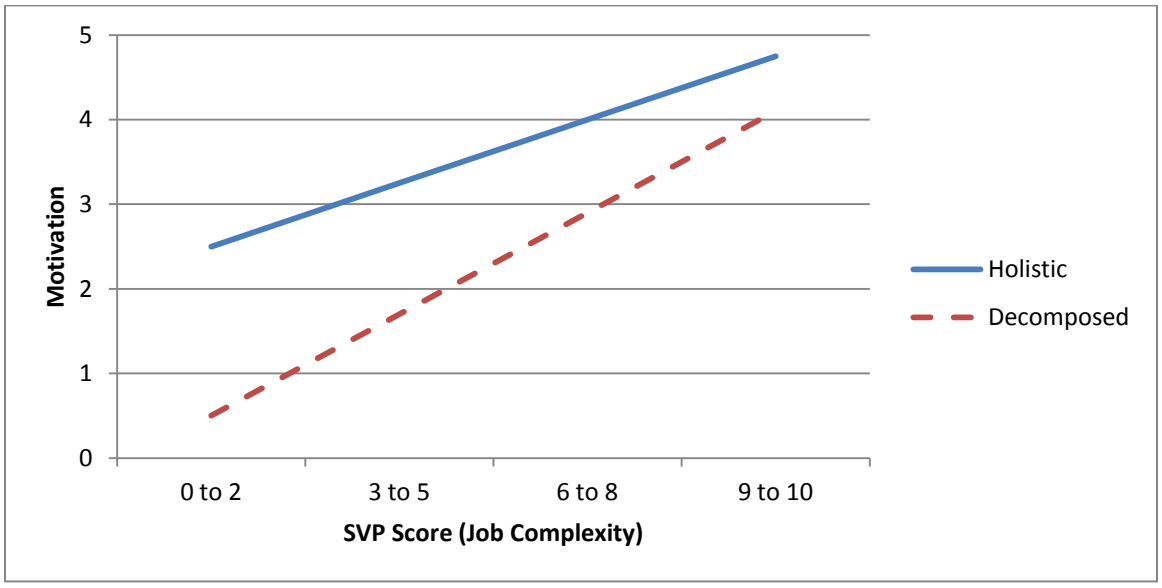


Figure 2

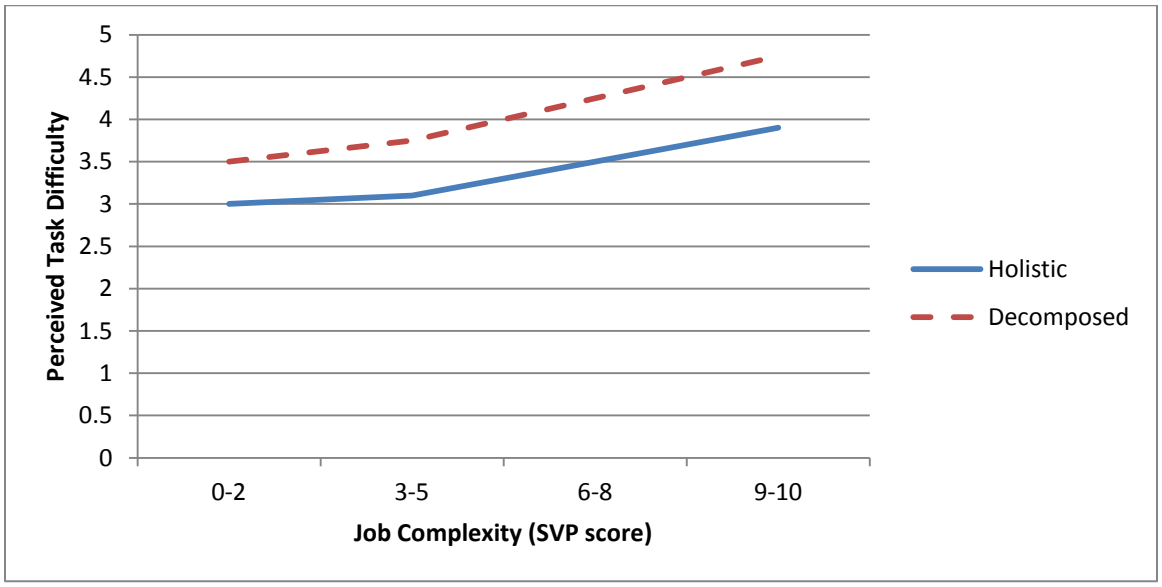


Figure 3

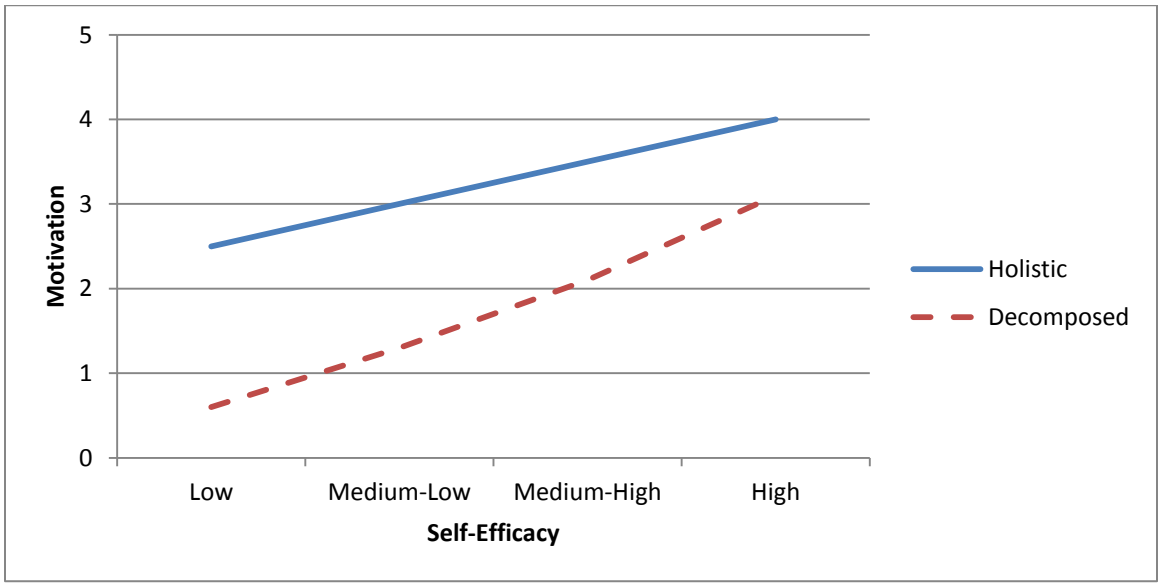
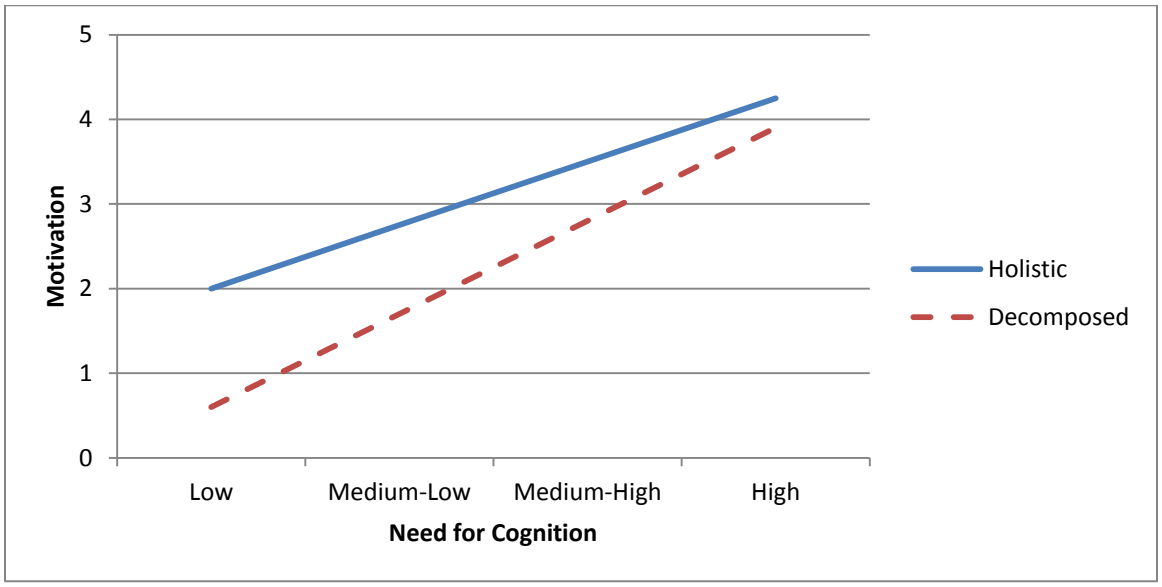


Figure 4



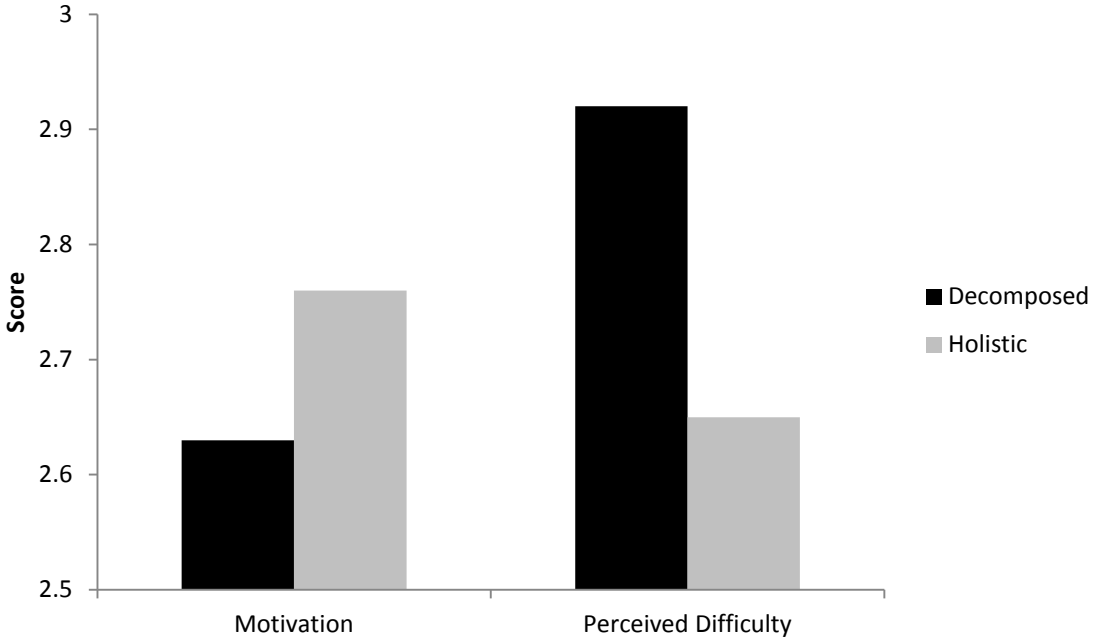


Figure 5. Graphical illustration of the significant differences between information processing strategies on motivation and perceived difficulty.

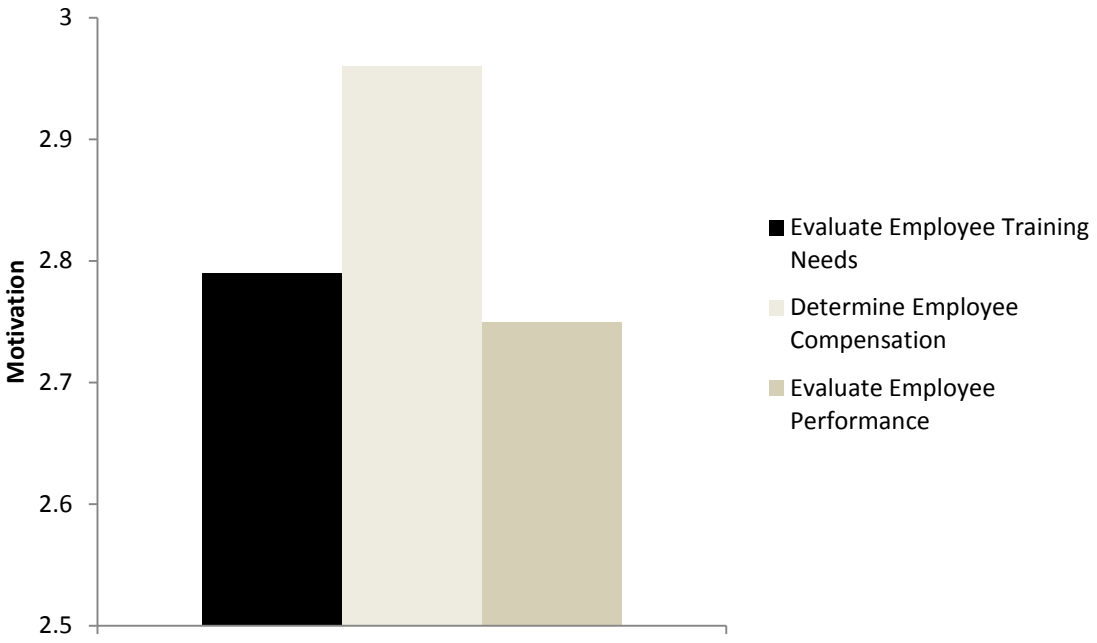


Figure 6. Graphical illustration of the significant effect of job analysis purpose on rater motivation.

APPENDIX

Appendix A

Intrinsic Motivation Inventory: Interest/Enjoyment subscale

1. I enjoyed doing this activity very much
2. This activity was fun to do.
3. I thought this was a boring activity. *
4. This activity did not hold my attention at all. *
5. I would describe this activity as very interesting.
6. I thought this activity was quite enjoyable.
7. While I was doing this activity, I was thinking about how much I enjoyed it.

* (asterisks indicate a reverse scored item)

Appendix B

Questionnaire Presentation to Respondents

The present research study will look to measure perceived motivation and perceived task difficulty in the context of a job analysis.

[page break]

A job analysis is a process leveraged to identify and determine the particular job duties and requirements and the relative importance of these duties for a given job. Typically, job incumbents (those who are currently holding or have held the position previously) are given a questionnaire to identify job duties, responsibilities, equipment used, work relationships, and work environment. Taking into account the information obtained from incumbent interviews, questionnaires, inventories, etc., job descriptions and/or job specifications are created, which lay the baseline for many human resource initiatives.

[page break]

Some of the potential uses for job analysis information are:

Determining of employee training needs: The information resulting from a job analysis helps to define what skills or competencies are needed for a given position. With this knowledge, organizations can focus training efforts on these position relevant skills instead of employing more generalized training for employees. This more directed training can be a more effective use of company resources.

Identifying appropriate employee compensation: Information obtained from a job analysis allows the job being analyzed to be compared to other jobs in terms of the skills and work environment. With this information, compensation specialists can be sure they are fairly compensating employees in comparison to those in a similar position with similar job requirements. Additionally, job analyses can highlight important compensable job factors that were not acknowledged in previous job descriptions.

Evaluating employee performance: Job analysis information solidifies which duties and skills are important for a position. Given this knowledge, managers and leaders can evaluate employees on the job dimensions deemed important by the job analysis, instead of evaluating employees on irrelevant job factors. On a related note, realistic and relevant goals can be set for employees, as the job analysis fleshes out what is truly important for success in a given job.

[page break]

When utilizing questionnaires to obtain the necessary information from job incumbents, it is essential that the information gathered is plentiful, complete and accurate. To ensure the information is consistent with those requirements, job analysis questionnaires can be presented using either a holistic processing strategy or a decomposed processing strategy. Both of these strategies will be thoroughly detailed in the following pages, using the occupation of College Professor as an example.

[page break]

A decomposed information processing strategy is one in which the job is broken down into its major components or tasks, and these major components or tasks are then judged by the incumbent(s). These components are rated on the usage and necessity of various abilities and work styles. Once all of these components have been rated individually, the ratings are then combined to create a rating for the job as a whole. Using the occupation of College Professor as an example, a decomposed job analysis is illustrated.

[page break]

A holistic information processing strategy is one in which the job is rated as a whole. When respondents are asked how useful or necessary it is to possess a necessary ability or work style, a holistic job analysis references the job overall, not one particular task. Using the occupation of College Professor as an example, a decomposed job analysis is illustrated.

[page break]

Now that an in-depth description of job analysis and the information processing strategies has been given, the study will now begin.

[page break]

Please indicate your current job title (please be specific)

_____

[page break]

Please answer the following questions as if you were completing a holistic job analysis questionnaire for YOUR OWN JOB.

1. How difficult do you feel it would be for you to complete a holistic job analysis for your own job?
    i. Easy
    ii. Somewhat easy

iii. Not easy nor difficult
iv. Somewhat difficult
v. Difficult

2. How difficult do you feel it would be for others to complete a holistic job analysis for your job?
    i. Easy
    ii. Somewhat easy
    iii. Not easy nor difficult
    iv. Somewhat difficult
    v. Difficult

[page break]

Please answer the following questions as if you were completing a holistic job analysis questionnaire for YOUR OWN JOB.

3. Indicate how true each of the statements would be if you were to complete a holistic job analysis for your own job. (On a scale of 1 to 5, 1 being Not at all true and 5 being Very true.)
    i. I would enjoy doing this task very much
    ii. This task would be fun to do
    iii. This would be a boring task
    iv. This task would not hold my attention at all
    v. I would describe this task as very interesting
    vi. This task would be quite enjoyable
    vii. If I were to do this task, I would think about how much I was enjoying it while completing it.

[page break]

4. Indicate how true each of the statements would be if you were to complete a holistic job analysis for your own job if it was going to be used to determine employee training needs. (On a scale of 1 to 5, 1 being Not at all true and 5 being Very true.)
    i. I would enjoy doing this task very much
    ii. This task would be fun to do
    iii. This would be a boring task
    iv. This task would not hold my attention at all
    v. I would describe this task as very interesting
    vi. This task would be quite enjoyable

vii. If I were to do this task, I would think about how much I was enjoying it while completing it.

[page break]

5. Indicate how true each of the statements would be if you were to complete a holistic job analysis for your own job if it was going to be used to identify appropriate employee compensation. (On a scale of 1 to 5, 1 being Not at all true and 5 being Very true.)
    i. I would enjoy doing this task very much
    ii. This task would be fun to do
    iii. This would be a boring task
    iv. This task would not hold my attention at all
    v. I would describe this task as very interesting
    vi. This task would be quite enjoyable
    vii. If I were to do this task, I would think about how much I was enjoying it while completing it.

[page break]

6. Indicate how true each of the statements would be if you were to complete a holistic job analysis for your own job if it was going to be used to assist in the evaluation of employee performance. (On a scale of 1 to 5, 1 being Not at all true and 5 being Very true.)
    i. I would enjoy doing this task very much
    ii. This task would be fun to do
    iii. This would be a boring task
    iv. This task would not hold my attention at all
    v. I would describe this task as very interesting
    vi. This task would be quite enjoyable
    vii. If I were to do this task, I would think about how much I was enjoying it while completing it.

[page break]

Please answer the following questions as if you were completing a decomposed job analysis questionnaire for YOUR OWN JOB.

7. How difficult do you feel it would be for you to complete a decomposed job analysis for your own job?
    i. Easy
    ii. Somewhat easy

iii. Not easy nor difficult
iv. Somewhat difficult
v. Difficult

8. How difficult do you feel it would be for others to complete a decomposed job analysis for your job?
    i. Easy
    ii. Somewhat easy
    iii. Not easy nor difficult
    iv. Somewhat difficult
    v. Difficult

[page break]

9. Indicate how true each of the statements would be if you were to complete a decomposed job analysis for your own job. (On a scale of 1 to 5, 1 being Not at all true and 5 being Very true.)
    i. I would enjoy doing this task very much
    ii. This task would be fun to do
    iii. This would be a boring task
    iv. This task would not hold my attention at all
    v. I would describe this task as very interesting
    vi. This task would be quite enjoyable
    vii. If I were to do this task, I would think about how much I was enjoying it while completing it.

[page break]

10. Indicate how true each of the statements would be if you were to complete a decomposed job analysis for your own job if it was going to be used to determine employee training needs. (On a scale of 1 to 5, 1 being Not at all true and 5 being Very true.)
    i. I would enjoy doing this task very much
    ii. This task would be fun to do
    iii. This would be a boring task
    iv. This task would not hold my attention at all
    v. I would describe this task as very interesting
    vi. This task would be quite enjoyable
    vii. If I were to do this task, I would think about how much I was enjoying it while completing it.

[page break]

11. Indicate how true each of the statements would be if you were to complete a decomposed job analysis for your own job if it was going to be used to identify appropriate employee compensation. (On a scale of 1 to 5, 1 being Not at all true and 5 being Very true.)
    i. I would enjoy doing this task very much
    ii. This task would be fun to do
    iii. This would be a boring task
    iv. This task would not hold my attention at all
    v. I would describe this task as very interesting
    vi. This task would be quite enjoyable
    vii. If I were to do this task, I would think about how much I was enjoying it while completing it.

[page break]

12. Indicate how true each of the statements would be if you were to complete a decomposed job analysis for your own job if it was going to be used to assist in the evaluation of employee performance. (On a scale of 1 to 5, 1 being Not at all true and 5 being Very true.)
    i. I would enjoy doing this task very much
    ii. This task would be fun to do
    iii. This would be a boring task
    iv. This task would not hold my attention at all
    v. I would describe this task as very interesting
    vi. This task would be quite enjoyable
    vii. If I were to do this task, I would think about how much I was enjoying it while completing it.

[page break]

13. Please rate the extent to which you agree with each of the following statements. Rate the items on a scale of 1 to 5. 1 being strongly disagree, 5 being strongly agree.
    i. I am able to achieve most of the goals that I have set for myself.
    ii. When facing difficult tasks, I am certain that I will accomplish them.
    iii. In general, I think that I can obtain outcomes that are important to me.
    iv. I believe I can succeed at most any endeavor to which I set my mind.
    v. I am able to successfully overcome many challenges.
    vi. I am confident that I can perform effectively on many different tasks.
    vii. Compared to other people, I can do most tasks very well.
    viii. Even when things are tough, I can perform quite well.

[page break]

14. Please rate the extent to which you agree with each of the following statements. Rate the items on a scale of 1 to 5. 1 being strongly disagree, 5 being strongly agree.
    i. I would prefer complex to simple problems
    ii. I like to have the responsibility of handling a situation that requires a lot of thinking
    iii. Thinking is not my idea of fun
    iv. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities
    v. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something
    vi. I find satisfaction in deliberating hard and for long hours
    vii. I only think as hard as I have to
    viii. I prefer to think about small, daily projects to long-term ones
    ix. I like tasks that require little thought once I've learned them
    x. The idea of relying on thought to make my way to the top appeals to me
    xi. I really enjoy a task that involves coming up with new solutions to problems
    xii. Learning new ways to think doesn't excite me very much
    xiii. I prefer my life to be filled with puzzles that I must solve
    xiv. The notion of thinking abstractly is appealing to me
    xv. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought
    xvi. I feel relief rather than satisfaction after completing a task that required a lot of mental effort
    xvii. It's enough for me that something gets the job done; I don't care how or why it works
    xviii. I usually end up deliberating about issues even when they do not affect me personally

[page break]

Thank you for completing this survey!

Appendix C

Chen, et al. (2001) 8-item new general self-efficacy measure

1. I will be able to achieve most of the goals that I have set for myself.
2. When facing difficult tasks, I am certain that I will accomplish them.
3. In general, I think that I can obtain outcomes that are important to me.
4. I believe I can succeed at most any endeavor to which I set my mind.
5. I will be able to successfully overcome many challenges.
6. I am confident that I can perform effectively on many different tasks.
7. Compared to other people, I can do most tasks very well.
8. Even when things are tough, I can perform quite well.

Appendix D

1. How difficult do you feel it would be for you to complete a holistic/decomposed job analysis for your own job?
2. How difficult do you feel it would be for others to complete a holistic/decomposed job analysis for their own jobs?

Appendix E

Cacioppo & Petty (1982) 18-item Need for Cognition scale

1. I would prefer complex to simple problems.
2. I like to have the responsibility of handling a situation that requires a lot of thinking.
3. Thinking is not my idea of fun.*
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*
5. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.*
6. I find satisfaction in deliberating hard and for long hours.
7. I only think as hard as I have to.*
8. I prefer to think about small, daily projects to long-term ones.*
9. I like tasks that require little thought once I've learned them.*
10. The idea of relying on thought to make my way to the top appeals to me.
11. I really enjoy a task that involves coming up with new solutions to problems.
12. Learning new ways to think doesn't excite me very much.*
13. I prefer my life to be filled with puzzles that I must solve.
14. The notion of thinking abstractly is appealing to me.
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*
17. It's enough for me that something gets the job done; I don't care how or why it works.*
18. I usually end up deliberating about issues even when they do not affect me personally.

(asterisks indicate a reverse scored item)

Appendix F

Specific Vocational Preparation Scoring Scale

1. Short demonstration only
2. Anything beyond short demonstration up to and including 1 month
3. Over 1 month up to and including 3 months
4. Over 3 months up to and including 6 months
5. Over 6 months up to and including 1 year
6. Over 1 year up to and including 2 years
7. Over 2 years up to and including 4 years
8. Over 4 years up to and including 10 years
9. Over 10 years