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Feedback Intervention Perceptions: Development and Validation of a Measure

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FEEDBACK INTERVENTION PERCEPTIONS:
DEVELOPMENT AND VALIDATION OF A MEASURE

by

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ABSTRACT

Reactions toward performance feedback have critical implications for organizations and are of great interest to practitioners. Unfortunately, the measurement of employee experiences with feedback intervention varies widely and the literature is flooded with atheoretical, untested measures. Measurement is also commonly done at a global reaction level, largely neglecting the complexity of feedback intervention. The current study presents and tests a new multidimensional measure of feedback intervention perceptions. The measure is intended to capture facet level perceptions regarding the characteristics of five feedback intervention components (i.e., Performance Measurement, Feedback Content, Feedback Delivery, Organizational System Support, and Feedback Source). Items were generated deductively based on influential works in the feedback and performance management literatures. Confirmatory factor analysis supported a five-factor structure. Correlational analyses demonstrated strong but differential relationships between the measure and several global feedback reaction measures and job satisfaction. Finally, regression analyses demonstrated significant direct effects of feedback intervention perceptions on motivation and intent to use feedback. Organizational (procedural and distributive) justice served to mediate the relationship between the Feedback Intervention Perceptions Scale and motivation. Overall, results support the validity and potential utility of the Feedback Perceptions Scale for both research and practice. Implications for theory and practice and directions for future research are discussed.

I dedicate this dissertation to my inspirational wife and best friend, Erika Roche Young. I can never repay her for her unconditional love, infinite patience, astonishing strength, consistent encouragement, and unwavering belief in me.

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CHAPTER ONE: INTRODUCTION

<u>Overview of Dissertation</u>

Performance management is "a continuous process of identifying, measuring, and developing the performance of individuals and teams and aligning performance with the strategic goals of the organization" (Aguinis, 2009; p.3). Formal performance management is a widely used organizational practice serving multiple strategic and tactical purposes that can produce important organizational benefits. For example, research has found relationships between performance management practices and firm outcomes such as profits, returns on investment, and stock prices (Huselid, 1995). In fact, organizations with strong performance management systems have been found to be fifty-one percent more likely to outperform their competitors on financial measures and forty-one percent more likely to outperform their competitors on non-financial measures (e.g., employee retention, customer satisfaction; Bernthal, Rogers, & Smith, 2003). Performance management systems are intended to motivate and develop employees by generating and delivering performance feedback that is aligned with organizational strategy, objectives, and standards (Cascio & Aguinis, 2011). Such systems allow organizations to communicate and negotiate performance expectations, and through embedded feedback interventions (e.g., performance reviews, developmental assessment centers, and goal setting processes), inform employees as to how well they are meeting those expectations. Some have argued that the creation and maintenance of effective systems for disseminating feedback are critical to organizational survival and success (Taylor, Fisher, Ilgen, 1984).

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Feedback is information or data regarding performance (Latham & Locke, 1991) and has been conceptualized as an individual resource used for monitoring and inquiry (Ashford, 1986; Ashford & Cummings, 1983). According to the *Performance Management: American National Standard* published by the Society for Human Resource Management (2012, p. 20) there is consensus among practitioners, "feedback is an essential feature of all stages of the performance review process." Further, researchers generally accept the provision of meaningful feedback as a critical intervention to guide motivate, and reinforce effective behavior and quell ineffective behavior (e.g., Cleveland, Murphy, Williams, 1989; London, 2003; Anseel, Van Yperen, & Janssen, 2010). Feedback interventions (FIs) are "actions taken by (an) external agent(s) to provide information regarding some aspect(s) of one's task performance" (Kluger & DeNisi, 1996; p. 255). Such interventions serve both informational and motivational purposes (Ilgen, Fisher, & Taylor, 1979) as feedback keeps employees informed of management's and their supervisor's expectations, how they are performing as compared to those expectations, and where they can make improvements. As such, many practitioners and researchers assume that feedback interventions are uniformly effective mechanisms towards performance improvement (e.g., Ammons, 1956; Kopelman, 1982). However, while the primary goal is to provide information intended to guide behavior toward performance improvement, improvement does not always occur. It seems that merely presenting performance feedback to a recipient is not enough.

There is undeniable evidence that performance management, when done well, can have significant effects on important organizational criteria. Unfortunately, poorly designed and administered performance management systems can set management up to fail at motivating employees toward performance improvement. The recipients (i.e., employees) of such practices form perceptions that influence the way they think, feel, or behave. Ultimately the success of a performance management system depends on the end users, so it is critical to understand their reactions toward these systems (Bernardin & Russell, 1998). Unfortunately, recent evidence suggests that end users' attitudes toward their performance management systems are generally unfavorable. Survey responses from nearly 50,000 participants indicated that only thirteen percent of managers and six percent of CEOs believed their organization's current performance management system is useful (Leadership IQ, 2005). Further, a study on the state of performance management indicated that almost sixty percent ($N = 750$) of surveyed HR executives graded their own systems at a C or below (World at Work/Sibson, 2010). As such, several organizations have or have considered abandoning their systems. More recently, a Cornerstone OnDemand (2013) study found that only thirty-four percent of participants felt they received useful feedback from managers during performance reviews. Further, twenty-six percent of participants indicated receiving regular performance feedback that helps them succeed in their role would motivate them to stay in their current positions. Rather than abandoning performance management systems, it seems that employers should instead focus on improving their systems' ability to effectively generate and deliver performance feedback. When users react favorably to their

performance management processes, they can become much more than "paper shuffling" exercises (Roberts & Reed, 1996; p. 34).

Much of the research on performance management has focused on the psychometric properties of performance appraisal rating systems (Tziner & Latham, 1989), accuracy and rater errors (Bretz, Milkovich, & Read, 1992; Saal, Downey, Lahey, 1980) and rater bias during the appraisal process (Landy & Farr, 1980). Such focus clouds the more important goal of performance management; the production and delivery of feedback that motivates performance improvement. Such research provides a limited view, as appraisal often includes only observation and judgment (e.g., quantitative rating) of performance. Measurement is critical but it is not sufficient in developing employees or producing positive performance change. Performance appraisals often do not consider business strategy, are a once a year event driven by the human resources department, and typically do not include extensive ongoing feedback (Aguinis & Pierce, 2008). Extensive ongoing feedback is more critical to performance improvement than a once a year meeting that may or may not include feedback other than the observer(s) ratings of the employee's performance. Information derived through performance measurement must be synthesized and fed back to the performer in terms of expected outcomes and behavior(s) to be performed, maintained, and/or extinguished.

While the systematic provision of feedback may only be part of a broad set of organizational performance management activities, flaws in the content and administration of feedback may explain some of the inconsistent findings regarding the effectiveness of performance management systems. Lizzio, Wilson, and MacKay (2008) posit that feedback

strategies are only as effective as the user's ability and willingness to use them. Thus, it is not only important to examine the practices but also how they are employed and experienced. It is critical that feedback interventions are effectively implemented by management and perceived favorably by end users. Employees are likely to use feedback toward performance improvement to the extent that the feedback intervention influences positive reactions such as perceiving the feedback as accurate and useful, and being satisfied with the feedback (Ilgen et al., 1979). Further, employees must perceive the process and outcomes of feedback interventions as being fair (Farndale, Hope-Hailey, & Kelliher, 2011).

When overall reactions to the intervention are favorable, feedback is more likely to be effective (e.g., Carroll & Schneier, 1982; Murphy & Cleveland, 1995). Findings on the effectiveness of feedback interventions indicate that feedback source (e.g., Greller & Herold, 1975), characteristics of feedback messages (e.g., Kluger & DeNisi, 1996), and characteristics of the recipient (e.g., Colquitt, LePine, & Noe, 2000) can ignite a variety of cognitive, affective, and behavioral reactions. Some researchers posit that these reactions are as critical to the effectiveness of the intervention as its reliability and validity (e.g., Dipboye & Pontbriand, 1981). For example, reactions such as feedback satisfaction and acceptance can ultimately influence key organizational criteria such as job performance, job satisfaction, and organizational commitment (e.g., Jawahar, 2006, 2010; Kuvaas, 2006).

Much of the research that has surveyed employees about their reactions to feedback has been done at a more global level (e.g., "Based on my contributions to my company, I am satisfied with the performance feedback I receive.") or on a limited number of feedback

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intervention characteristics at a time. The complex nature of and interactions between the characteristics of feedback content, processes, and contexts require a more holistic, facet level approach to studying feedback interventions. Where more holistic attempts have been made, the researchers have had to use a variety of piecemeal or single item measures. Often researchers have had to create their own brief scales without first subjecting them to validation efforts. Due to the use of fragmented measures and studies exploring a limited number of feedback intervention components at a time there are gaps in the feedback literature and inadequate means of auditing feedback interventions.

<div align="center">Purpose of the Current Study</div>

Currently, there is no one measure that is useful for holistically evaluating or auditing organizational feedback systems. While considerable attention has been devoted to performance management processes, much of the research has focused on the psychometric properties of appraisal tools (e.g., format, scale development, rater accuracy) and has largely neglected their central purpose, measuring and communicating performance information in a way that will motivate improvement (e.g., Landy & Farr, 1980; Bretz et al., 1992; Ilgen, Barnes-Farrell, & McKellin, 1993; DeNisi & Pritchard, 2006). Not only are perceptions of feedback interventions critical to this purpose (e.g., Dipboye & Pontbriand, 1981; Murphy & Cleveland, 1995), such criteria are of more interest to practitioners than the psychometric properties of performance appraisals (e.g., Thomas & Bretz, 1994; Murphy & Cleveland, 1995; Keeping & Levy, 2000).

The primary goal of this dissertation was to develop a parsimonious yet comprehensive means to systematically audit the system(s) employed by organizations to measure employee job

performance and provide meaningful feedback. Specifically, a multidimensional instrument was developed to measure perceptions of several feedback intervention characteristics. These characteristics represent five proposed major feedback intervention components (i.e., performance measurement, feedback content, feedback delivery process, feedback source, and system commitment). The second objective was to explore the relationships of these perceptions with global cognitive (e.g., accuracy, utility, fairness) and affective (e.g., satisfaction with feedback) reactions to feedback intervention. Favorable perceptions of intervention characteristics were expected to be strongly related to positive global reactions to feedback intervention, and ultimately higher levels of motivation. The current paper reviews and summarizes the literature on feedback interventions (e.g., performance appraisal, developmental assessment centers), highlighting and synthesizing system components and the characteristics that influence their effectiveness. Such a review provided a well-grounded, system-based framework for creating a measure to evaluate feedback interventions and theoretical background for the proposed model.

Feedback interventions vary widely across organizations and there is often considerable variability in feedback practices within organizations. Practitioners and researchers could benefit from a tool to survey multiple employees across various organizational settings and levels regarding their perceptions of the feedback intervention(s) used within their organizations. Such an instrument would have diagnostic utility for practitioners wishing to uncover deficiencies (e.g., invalid measures of performance, system training needs, lack of feedback specificity) or identify the strengths of an organization's feedback intervention(s). For instance, parts of the

feedback intervention could be operating effectively while others are not. Measuring and reviewing employee perceptions could help pinpoint where a system is lacking. This ability could save an organization thousands of dollars by preventing the premature abandonment of a system that may need some improvement in favor of the latest management fad and increase the return on investment for amending and maintaining the current system.

The present research also contributes to the feedback and performance management literatures by providing a valid mechanism for holistically auditing the characteristics of organizational feedback interventions. Researchers could benefit from such a measure as it would allow them to capture baseline perceptions of current interventions as a point of reference when exploring the impact of manipulating them or implementing new systems. The ability to evaluate feedback system components and characteristics is critical for furthering our understanding of the mechanisms by which feedback is effective. Such a tool would permit researchers to investigate the differential impact of system components and characteristics on key organizational criteria.

The paper begins with a review of the literature focused on the practical and conceptual advantages of good feedback interventions and the characteristics that make them valuable. A review of employee reactions to feedback and feedback intervention follows. The paper presents a description of the development and validation of a multidimensional scale to measure employee perceptions of their organizational feedback interventions. The description includes an evaluation of the instrument's internal consistency and factor structure, an examination of its relationship with global feedback reaction measures and job satisfaction, and empirical tests of

the instrument's relationships with organizational justice and motivation. This research supports the proposed structure and usefulness of the new measure (Feedback Intervention Efficacy Audit) as a tool for organizations and researchers wishing to evaluate organizational feedback interventions.

CHAPTER TWO: LITERATURE REVIEW

This chapter highlights the significance of effective feedback intervention and discusses the importance of reactions to feedback intervention. Feedback intervention is defined more fully and a systems framework for categorizing feedback intervention characteristics is summarized. These characteristics are then linked to several outcomes of interest to employers (e.g., justice, performance, motivation). A synthesis of cognitive reactions (e.g., perceptions of accuracy and equity) and affective reactions (e.g., satisfaction) to feedback intervention follows. Based on the feedback and performance management and appraisal literatures, the section concludes with a list of characteristics that may influence global feedback reactions and ultimately the effectiveness of feedback interventions. The identified characteristics were used as the basis for measurement development.

Decades of primary studies offer evidence that feedback interventions can have positive impact on individual and group performance (e.g., Locke, 1968; Erez, 1977; Ilgen & Moore, 1987; Pritchard, Jones, Roth, Stuebing, & Ekeberg, 1988; Balzer, Doherty, O'Connor, 1989; Earley, Northcraft, Lee, & Lituchy, 1990; Stajkovic & Luthans, 2001; DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004; Geister, Konradt, & Hertel, 2006; Ludwig & Goomas 2009). Similarly, multiple meta-analyses (Guzzo, Jette, & Katzell, 1985; Fried & Ferris, 1987; Rodgers & Hunter, 1991; Kluger & DeNisi, 1996; Humphrey, Nahrgang, & Morgeson, 2007; Pritchard, Harrell, DiazGranados, & Guzman, 2008) and comprehensive objective reviews (e.g., Alvero, Bucklin, & Austin, 2001; Balcazar, Hopkins, & Suarez, 1985) have found moderate to large positive effect sizes for the impact of feedback interventions on critical criteria. It could be

argued that feedback interventions are perhaps the most important feature of performance management systems as they convey critical information to employees about which behaviors and activities are valued by the organization. When done well, such intervention can have tremendous positive effects on productivity and firm performance; however, when done poorly (e.g., feedback is incomplete or inconsistent with organizational objectives), the intervention can be counterproductive (Pritchard, 1990).

Specific support for the effectiveness of feedback interventions includes Alvero et al.'s (2001) review of the performance feedback literature. They found that feedback yielded favorable, consistent effects in fifty-eight percent of the reviewed feedback applications ($N =$ 68), mixed effects in forty-one percent of the applications, and no effects in only one percent of the applications. Similarly, a meta-analysis by Guzzo et al. (1985) found that productivity interventions improved productivity by nearly one-half of a standard deviation. While they found great variability between intervention programs, those involving appraisal and feedback had powerful effects. For further support, consider the meta-analytic evidence on management by objectives (MBO) systems (Rodgers & Hunter, 1991). Of the seventy primary studies included in their study, sixty-eight showed productivity gains and only two showed losses. Finally, a meta-analysis by Pritchard et al. (2008) examined the effectiveness of the Productivity Measurement and Enhancement System (ProMES) at improving the productivity of work units through robust performance measurement and feedback. The average effect size in this study was 1.16, meaning that productivity under ProMES feedback was 1.16 standard deviations higher than productivity before ProMES feedback. It is clear that impressive performance gains can result from

measuring performance and formally feeding information regarding that performance back to employees; however, there are caveats.

While Pritchard et al. (2008) found a large average effect size for ProMES, these effect sizes ranged from -2.53 to 5.37 indicating that even when using the same intervention there are extraneous variables that impact its utility. Moderators of the ProMES-productivity relationship included how closely the implementation matched the recommended process and quality of feedback. Similarly, while Kluger and DeNisi's (1996) found in their meta-analysis that feedback interventions (FIs) improve performance by approximately 0.40 of a standard deviation, more than one-third of the 607 calculated effect sizes indicated negative performance effects. Although moderators were identified (e.g., discouraging FIs, velocity FIs, correct solution FIs, FI for performance of physical tasks), many of these moderators were still largely misunderstood leading the authors to later conclude that "FIs are double edged swords" (Kluger & DeNisi, 1998, p. 1). Finally, objective reviews of the effectiveness of feedback have also concluded that while feedback interventions can be successful, feedback does not consistently improve performance (Alvero et al., 2001; Balcazar et al., 1985).

Feedback within Performance Management Systems

Within organizational contexts, feedback is nestled inside a broad set of performance management activities, aimed at guiding employee behavior and motivating employee performance improvement. While feedback can be internally or task generated, the current investigation is focused on feedback that is part of an intentional intervention and generally delivered via an external source. The study mainly draws from performance appraisal and

performance review literature regarding the provision of feedback on long-term and already learned tasks in field settings. Although focus was not placed on occasional, informal feedback or feedback on short-term, contrived learning tasks (e.g., Kluger & DeNisi, 1996), such research was addressed when relevant.

Murphy and Cleveland (1995), among others, consider the feedback activity of performance management as a motivational, communication, and social process. This perspective is appropriate considering the contexts in which feedback takes place, the people involved, and their intentions. Ilgen et al. (1979, p. 350) conceived of feedback as a "special case of the general communications process." This process involves the source of the feedback expressing to the recipient information about their performance. Pritchard (1990) cited that feedback interventions should include both an evaluation and a description of performance. Such information allows performance to be adjusted accordingly.

Earley et al. (1990) describe two broad types of feedback: process feedback and outcome feedback. Process feedback refers to information regarding the task process used to produce an end result, whereas outcome feedback refers to information regarding the end result of a specific task. Most commonly, organizations rely on performance appraisal and performance review for delivering employee feedback. Generally, these systems require a supervisor to provide a rating regarding the processes of performing work (e.g., delegation, planning); however, they often fail to provide feedback regarding outcomes. Locke, Cartledge, and Koeppel (1968) found that outcome feedback or knowledge of results (KR) can provide direction and motivation. Salmoni, Schmidt, and Walter (1984) also contend that there are motivating or energizing properties of

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KR. Specifically, when people have knowledge of their results they exert more energy toward performance goals and have the information needed to make performance improvements over time (London, 2003). Likewise, Ilgen et al. (1979) posit that feedback has directional and motivational properties; directional because it clarifies roles for recipients by informing them of the behaviors that should be performed (process feedback), and motivational when information is provided that associates behavioral outcomes with rewards. Feedback interventions can and should include both process and outcome feedback (e.g., Earley et al., 1990; Kluger & DeNisi, 1996).

As previously mentioned, simply making feedback available will not always lead to positive outcomes. Fortunately, researchers have explored several characteristics of feedback intervention and have made some general conclusions regarding their effectiveness. For example, effective feedback is generated through observation and measurement of performance as compared to valued and agreed upon organizational standards (e.g., Taylor et al., 1984). Additionally, effective feedback content is descriptive, evaluative, and prescriptive in nature (e.g., Balcazar et al., 1986) and perceived as accurate (e.g., Keeping & Levy, 2000). Among other characteristics, both effective measurement and feedback delivery processes are participative in their design and implementation, simple to use, and flexible to changing needs (e.g., Pritchard, Weaver, & Ashwood, 2012). Considering that feedback is a social process, contextual factors (i.e., organizational commitment to the system and the source(s) of feedback) are also important (e.g., Giles, Findley, & Field, 1997). The preceding characteristics, among others found in the literature, tend to describe five major intervention components; (a)

performance measurement, (b) feedback content, (c) feedback delivery, (d) system commitment, and (e) feedback source. Through an extensive literature review, critical feedback intervention characteristics were identified and categorized according to an intervention component framework. The components and referent characteristics are listed in Figure 1 and defined and described more fully in the following section and Table 1.

Feedback Intervention Perceptions				
Performance Measurement	Feedback Content	Feedback Delivery	System Commitment	Feedback Source
❑ System Knowledge	❑ Evaluative	❑ Available	❑ Maintenance	❑ Credible
❑ Valid Measures	❑ Strategic	❑ Participative	❑ Incentives	❑ Multiple Inputs
	❑ Illustrative		❑ Training	❑ Supportive
	❑ Valid Content			

Figure 1: Feedback Intervention Component Model

Conceptually, each of the intervention components is highly related to one another. However, the system commitment component is contextual and reflective of the feedback environment. As such, it may be more distally related to the other components in the model. The most proximal relationships are between the performance measurement and feedback content components, and the feedback content and feedback delivery components. Feedback content is derived through performance measurement. As such, perceptions of these components may be similar. Feedback delivery refers to the availability of feedback content and the social exchange processes during the provision of that content. Thus, it is likely perceptions of these components will be highly related. Feedback source must also be considered as an intervention component, as the source may be confounded with the message (Ilgen et al., 1979). Considering the feedback

source delivers feedback content, it is expected that experience with the source will also be highly related to experience with content and delivery. However, source may be more distally related to performance measurement. Good performance measurement systems are developed jointly with employees and include objective measures. As such, it may be easier for feedback recipients to separate their experience with the feedback source from their perceptions of the performance measurement system. This may be harder for recipients who only receive subjective ratings from their source on generic measures.

Perceptions of feedback intervention characteristics can influence divergent recipient reactions and ultimately, whether feedback is acted upon. Unfortunately, research has not given as much focus to perceptions and reactions. For example, Kluger & DeNisi's (1996) meta-analysis focused on the effects of providing feedback but did not examine the effects of reactions to performance feedback. Recent research by Jawahar (2010) suggests that reactions to the feedback intervention, not necessarily the feedback itself, influence performance. Generally, reactions can be classified as cognitive, affective, or behavioral in nature (Taylor et al., 1984; Sweeney & Wells, 1990) and can impact behavioral responses such as motivation to improve job performance (e.g., Burke, Weitzel, & Weir, 1978; Nemeroff & Wexley, 1979). Measurement of these reactions is commonly done at a global level. Meaning, the scales used to measure reactions require respondents to think about their overall feelings regarding the feedback they receive (e.g., "The performance feedback I received was accurate.") or their feedback interventions (e.g., "The feedback process is fair."). While this level of measurement can be useful for theoretical and practical purposes, it is less useful for diagnostic purposes and may

largely ignore the complexity of feedback intervention. As such, this study is focused on the development of a multidimensional, facet level measure of feedback intervention characteristics. Intervention characteristics and the reactions they produce are discussed in the following sections.

<u>Characteristics of Feedback Interventions by Intervention Component</u>

Considering the varied research cited up to this point, one can already surmise that recipient's perceptions regarding the feedback they receive and subsequent decisions to accept or reject it is dependent upon a wide variety of characteristics pertaining feedback intervention; Ilgen et al., 1979; Balcazar et al., 1986; Kopelman, 1986; Taylor et al., 1984; Bobko & Colella, 1994). Support for examining these characteristics is highlighted in a qualitative study by Longenecker and Nykodym (1996). They examined the problems with using feedback in performance appraisal as a tool for performance improvement, motivation, and communication. To improve the feedback process, employees suggested that managers (a) schedule an appropriate amount of time for feedback, (b) increase their knowledge of the job and its performance standards, (c) clearly describe performance standards, (d) place greater emphasis on development, (e) balance negative feedback with positive feedback, (f) provide feedback more frequently, and (g) make the feedback session more participative. These characteristics align with those listed in Figure 1 above. For instance, "scheduling an appropriate amount of time for feedback" and "provide feedback more frequently" align with the "available" characteristic. In addition to measuring user perceptions of these variables, the literature supports the

consideration of several others when evaluating feedback interventions. Characteristics that apply to measurement and feedback content and processes should be considered as well as characteristics of contextual facets (i.e., organizational support and source). The following review is organized around the major feedback intervention components represented in Figure 1 (i.e., performance measurement, feedback content, feedback delivery, system commitment, and feedback source).

Table 1 and the following sections define and discuss several characteristics in relationship to the feedback intervention components they describe. The emphasized characteristics were chosen for three primary reasons; (a) they contain clear theoretical explanations for their effects on feedback reactions and organizational outcomes, (b) previous empirical research has found support for their effects, and (c) they have clear implications for practitioners.

Table 1: Feedback Intervention Characteristics and Definitions by System Component

Intervention Characteristics	Definitions
Performance Measurement	
System Knowledge	Understanding of the measurement system and effort needed to complete performance measurement and change the performance standards when needed.
Valid Measures	Extent to which unit personnel agree upon the measurement standards and feel the system realistically and consistently measures all job relevant standards of performance.
Feedback Content	
Evaluative	Extent to which feedback tells the recipient how well they are performing (e.g., effectiveness as compared to organizational standards, goals, and/or historical performance) and how their performance links to outcomes.
Strategic	Extent to which feedback delivery involves action planning for performance improvement or behavioral change, strategy discussion, career planning, and goal/objective setting.

Intervention Characteristics	Definitions
Illustrative	Extent to which feedback is delivered in an interpretable manner. Interpretation is guided by specific examples, clear reasoning, and information that can help the recipient integrate conflicting goals and determine where to allocate resources in proportion to their importance.
Valid Content	Extent to which feedback is provided on job related behavior, is based on standards that are under the recipient's control, and provides a complete picture of job performance.
Feedback Delivery	
Available	The amount and the extent to which feedback is available when needed.
Participative	The extent to which employees' views are solicited and listened to during feedback delivery.
System Commitment	
Incentives	The extent to which users are rewarded for their roles in the system.
Maintenance	The extent to which the organization monitors the system to make sure it is working as intended, making improvements/adjustments where deemed necessary.
Training	The extent to which employees are trained to monitor performance and use feedback.
Feedback Source	
Credibility	The extent to which feedback recipients deem the source of their feedback as a trusted expert who understands their job demands, pressures, and constraints and has adequate opportunity to observe their performance.
Multiple Inputs	Extent to which feedback is based on information from multiple sources.
Supportiveness	Extent to which the source creates a comfortable environment and conveys helping behaviors when delivering feedback.

Performance Measurement

Performance measurement refers to a combination of objective and subjective measures used to assess individual, unit, and organizational performance. Measured performance is evaluated against a set of standards. The standards communicate expectations and clearly distinguish between what constitutes good and poor performance. Measurement alone is not

feedback but it is integral to the generation of feedback. Some form of purposeful measurement should be incorporated into all effective performance management processes (Society for Human Resource Management, 2012). When measurement systems are poor, performance management processes (e.g., feedback, goal setting, incentive systems) will be weak (Pritchard et al., 2012). Measurement has purpose when it can be used to inform and facilitate feedback regarding employee performance as compared to some organizational standard. In this respect, standards have an evaluative component that is usually stable across individuals within an organization (Bobko & Colella, 1994). These standards must be clearly defined, linked to unit and individual performance, and disseminated across and understood by employees. Aguinis (2009) posits that there are two critical prerequisites needed before implementing an effective performance management system; knowledge of the organization's mission and objectives, and knowledge of the job in question are critical to defining performance and identifying measurable performance indicators. Strategic planning at the organization level helps identify and define an organization's purpose and future aspirations. Once established, these goals should cascade downward and be incorporated into unit objectives and ultimately individual employee goals. When this is done properly, goals and objectives at all levels should be aligned (Aguinis, 2009).

To fulfill the second pre-requisite, knowledge of the job in question, some form of job analysis should be conducted (Aguinis, 2009). The job analysis process should identify all of the key components of the job in question (e.g., tasks, products produced, services provided) and guide the development of performance standards. These standards communicate acceptable and unacceptable performance and are typically measured by some combination of objective (e.g.,

output, sales volume, complaints) and subjective (e.g., supervisory rating) evaluations. These evaluations are used to generate feedback content.

Considering performance for many positions can be difficult to measure solely on objective criteria, employee involvement in developing these standards is extremely important. Employee involvement also leads to increased knowledge about organizational and unit objectives. Involvement brings consensus as to not only what each employee needs to do, but also how much of it they need to do and how well they need to do it. This consensus is critical as two of the most important determinants of feedback acceptance are agreement regarding job duties and shared beliefs about the criteria for distinguishing between "good" and "poor" performance (Murphy & Cleveland, 1995). When employees understand the performance measurement system, concur with management regarding the efficacy and appropriateness of performance standards, and are confident that the measurement is accurate, they are more accepting of the intervention (Roberts & Reed, 1996) and likely the feedback produced. For example, greater satisfaction with the appraisal feedback interview has been attributed to higher levels of employee involvement in developing the performance rating system (Silverman & Wexley, 1984). Moreover, perceived system knowledge has been shown to be positively related to job satisfaction and organizational commitment (Williams & Levy, 1998).

When established collaboratively, standards are more likely to be perceived as fair (Taylor et al., 1984). For example, Erdogan, Kraimer, & Liden. (2001) found that knowledge of appraisal criteria and validity of appraisal criteria were positively related to perceptions of system procedural justice. Such participation also likely increases the relevancy and clarity of

performance standards and measurement processes. When employees understand how they are being evaluated and feel they are being evaluated against relevant standards, they are likely to react more favorably to the feedback they receive. Indeed, meta-analytic evidence indicates that job relevance, specificity, and ease of use/simplicity serve as useful predictors of ratee reactions in a performance appraisal context (Zuber & Behson, 1998). More recently, Jawahar (2010) revealed that job relatedness of performance criteria were substantially related to ratees' perceived accuracy and usefulness of the feedback, and satisfaction with feedback. Similarly, clarity regarding standards of performance led to feedback recipient understanding, perceptions of feedback accuracy, and acceptance of feedback. It is also worth noting that feedback recipients are more accepting of negative feedback when it is based on evaluation of factors perceived as job relevant (Dipboye & Pontbriand, 1981).

To summarize, the effectiveness of the performance measurement component is dependent upon employees' system knowledge and consensus around the validity of the performance measures. Employee involvement in system development can help build both.

Feedback Content

Feedback content refers to the message delivered to the recipient regarding the evaluation of their job behaviors as compared to set performance standards. Feedback content should include a description and evaluation of performance, clear reasoning for the evaluations, strategies for improvement and growth, and should be viewed as valid. Evaluative feedback includes the sign of the feedback (positive vs. negative), linkages to behavioral consequences or outcomes, and comparisons (e.g., historical, standards, co-workers). Content is often dictated by

the purpose of the feedback intervention and has important consequences for behavior. While the primary goal of feedback should be performance improvement, performance appraisals are often used for documentation and making employee decisions (Cleveland et al., 1989). Dorfman, Stephan, and Loveland (1986) empirically identified three dimensions of feedback from formal performance appraisal: two developmental dimensions (being supportive; emphasizing performance improvement) and one administrative dimension (discussing pay and advancement). Results indicated that a message of support was associated with higher levels of employee motivation, while discussing behavioral consequences (i.e., pay and advancement) was associated with higher levels of employee satisfaction. Similarly, Zuber and Behson (1998) found that both career development and salary discussions impact ratee reactions. Career development discussions had significantly larger mean effects on reactions in general than salary discussions; however, salary discussions did have larger mean effects for satisfaction with the performance appraisal system than did career development discussions. Thus, it seems different types of evaluative content are important and can evoke important and divergent reactions.

Feedback sign provides important evaluative information regarding the recipient's performance compared to standards and has been found to influence employee reactions (Anderson & Jones, 2000). In general, researchers agree that positive feedback tends to be accepted more readily, and that negative feedback may be denied depending upon the recipient's self-concept (e.g., Brett & Atwater, 2001; Halperin, Snyder, Shenkel, & Houston, 1976; Stone & Stone, 1985; Bell & Arthur, 2008). While positive feedback may be easier to accept than negative feedback, Podsakoff and Farh (1989) found that negative feedback leads to greater

performance improvement. Further, Kluger and DeNisi (1996) found that feedback sign did not moderate the feedback-performance relationship and Zuber and Behson (1998) found that while favorability ratings of feedback may be important predictors of reactions, systemic aspects of performance appraisal are also meaningful predictors. Steelman, Levy, and Snell (2004) findings that employees are more satisfied with, motivated to use, and willing to seek additional feedback when negative feedback is an accurate reflection of performance support this conclusion.

Considering the preceding evidence, it is apparent that systematic factors beyond sign influence performance improvement following negative feedback. For example, Leung, Su, and Morris (2001) found that higher levels of feedback privacy and the organizational status of the source resulted in more favorable responses to negative feedback. Additionally, Halperin et al. (1976) found that feedback source, availability of supporting information (e.g., critical incidents), and consistency may moderate the impact of sign. Further, Dipboye and Pontbriand (1981) concluded that feedback recipients were more receptive to negative feedback when they felt the evaluation was based on job relevant factors and the feedback session included a discussion of plans and objectives and was perceived as participative. Discussing plans and objectives may transfer recipients' focus on meta-level meaning of the negative feedback to strategies for using it for performance improvement. To guide performance improvement managers cannot avoid providing negative constructive feedback (Kinicki, Prussia, Wu, & Mckee-Ryan, 2004) and must rely on positive employee reactions toward this feedback. Thus, it is critical that credible sources deliver balanced feedback (positive and negative) in a

constructive fashion. Constructive feedback content is targeted at job relevant criteria and includes clear reasoning for evaluation and strategies for improvement and growth.

It is well established that feedback targeted toward job tasks can lead to considerable improvement in future performance (Balcazar, et al., 1985; Ilgen, et al., 1979). Halperin et al. (1976) indicated that type of feedback (emotional versus task) may also moderate the effects of feedback sign. Specifically, negative feedback can have positive effects when it is task based versus emotional based. Further, meta-analytic evidence indicates large favorable effects occur when feedback is non-threatening to the self (Kluger & DeNisi, 1996). Individuals will waste cognitive resources focusing on identity-related issues when feedback is directed at internal causes of poor performance (DeNisi & Kluger, 2000). When the feedback message is combined with a legitimizing statement and uses less personal feedback language, ratees report more positive reactions (Waung & Jones, 2005). Conversely, the use of more personal language was negatively related to ratee confidence in rater judgment, and to the rater's likability.

In addition to a focus on job related behavior, feedback should be focused on performance that is under ones control. Expectations of success are largely determined by ability and the level of control one has to affect an outcome. Typically, employees can control how their work is performed (behavior), but due to social or situational constraints they may not always have control over the results of their actions. Recipients are generally more willing to accept and act on feedback regarding behavior or performance goals they can control (Andrews & Kacmar, 2001). As such, the indices of performance should be difficult but attainable and not be overly determined by influences external to behavior (e.g., inter-unit dependency, market conditions,

technology). Employee involvement in the setting of performance standards should help ensure that the derived criteria and subsequent feedback meet this guideline.

Reactions to comparative and absolute feedback have also been explored in the literature. Prue and Fairbank (1981) outlined five commonly employed types of information provided to recipients (a) comparison of an individual's performance to their past performance, (b) comparison of an individual's performance with a standard set by the organization, (c) comparison of a group's performance with its previous performance, (d) comparison of a group's performance with a group standard, (e) presentation of an individual's performance as a percentage of the group's performance. Using this framework, Balcazar et al. (1985) found the highest consistency of positive effects from feedback came from providing individuals information about their performance compared to a standard set by the organization. Similarly, Alvero et al. (2001) found the most consistent positive effects of feedback when information was provided to an individual about their performance compared to a set individual standard of performance, and when a group was provided information regarding their performance compared to a standard set for group performance. Additionally, Moore and Klein (2008) found in two separate samples that absolute feedback had stronger and more consistent effects on satisfaction with performance appraisal and state self-esteem. Further, Lawler (2003) found that performance management systems that employ a forced distribution approach (raters are forced to place employees in a 1 to N order based on relative performance) are associated with lower effectiveness in general. Possible explanations included issues of perceived fairness and credibility leading employees to be less receptive to feedback from the system. Bernardin and

Russell (1998) contend when comparative rankings are made, in favor of absolute ratings, employees who fall below the midrange may still be performing at or above standards. Those who fit this mold and take pride in their work may have negative reactions towards such a system. Issues such as competition and aversiveness must be considered when determining what information should be provided (Prue & Fairbank, 1981).

Further research on this distinction has explored the interactive effects of learning goal orientation. Anseel et al. (2010) found that individuals pursuing performance-approach goals responded more negatively than individuals pursuing mastery-approach goals, to comparative feedback but not to task-referenced feedback. The interaction between achievement goals and feedback type also indirectly effected task performance through feedback reactions. Objective evidence of this effect is evident in the Kim, Lee, Chung, and Bong. (2010) study of brain regions associated with negative affect. Such regions were activated during norm-referenced feedback (comparative) among study participants with low-competence and during criterion-referenced feedback (absolute) for high-competence participants. Additionally, performance-approach goals activated the brain areas implicated in the negative emotion during norm-referenced feedback. Considering the preceding evidence, it seems that feedback should include an evaluation of performance compared to set organizational standards and historical performance.

The utility of the message is dependent upon the recipient's ability to convert the feedback into action toward performance improvement. As such, feedback should provide specific and clear illustrations of behaviors as they relate to job performance (e.g., correctness,

adequacy, accuracy). For example, Ilgen and Moore (1987) reported: (a) when supervisors presented feedback regarding quality of work, quality improved; (b) when employees received feedback regarding work quantity, it led to higher quantities; and (c) when feedback was given regarding quality and quantity, both improved. Similarly, Sujan (1986) found that feedback attributing failed selling efforts to poor strategy, led salespeople to work smarter. However, when feedback implied lack of effort – a salesperson was likely to work harder but not necessarily smarter. Each of these examples indicates that specificity regarding the supervisor's assessment of behavior can have direct influence on future behavior.

It is also important that the message provides performance information beyond what is already known by the recipient (Ilgen et al., 1979). Additionally, Kluger and DeNisi (1996) found that some of the largest effects from feedback occurred when there were cues supportive of learning. Feedback may be most beneficial for learning when more elaborated specific information is provided. Elaborated feedback components might include; (a) information on task constraints and requirements, (b) conceptual knowledge sharing, (c) procedural or "how to" knowledge, and/or (d) information on metacognition (Narciss, 2008). Raemdonck and Strijbos (2013) found that elaborated feedback is perceived as more adequate. Adequate was operationalized as willingness to improve, positive affect, and internal attribution post feedback.

A review by Locke et al. (1968) concluded that feedback did not help unless it was given in a form that facilitated goal setting or evaluation of progress toward a goal. Thus, feedback content should also be strategic in nature; meaning it should encourage and shape some form of goal-setting and monitoring. Feedback intervention theory's (FIT) major propositions pull from,

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among others, goal setting theory (Locke & Latham, 1990) and control theory (Carver & Scheier, 1981). For example, one of the propositions of FIT is that goal setting interventions should augment the effect of feedback intervention on task performance. The influence of goal setting and control theory is also apparent in the five basic assumptions of FIT: (a) behavior is influenced through evaluation and reaction to feedback-standard or feedback-goal comparisons; (b) standards or goals are arranged hierarchically; (c) attention is limited, thus only feedback-standard gaps that receive attention will influence behavior; (d) attention is typically directed to a moderate level of the hierarchy; and (e) FIs change the locus of attention and influence subsequent behavior (Kluger & DeNisi, 1996; p. 259).

The benefits of feedback in enhancing specific and difficult goals have been well established (Tubbs, 1986). Zuber and Behson (1998) found that feedback intervention when paired with goal setting is associated with higher satisfaction with feedback session, satisfaction with the system, perceived system utility, and accuracy and fairness. Beyond reactions, Erez (1977) concluded that goals without feedback have little to no effect on performance, and Nemeroff and Cosentino (1979) found that feedback plus goal setting was far superior to feedback alone on improving performance. Further, research by Pritchard and colleagues (Pritchard et al., 1988; Pritchard, Jones, Roth, & Stuebing, 1989) found that group level feedback increased productivity an average of fifty percent over baseline and the addition of post feedback goal setting increased productivity an average of seventy-five percent over baseline.

In addition to improving performance, Tziner and Latham (1989) found feedback followed by goal-setting resulted in significantly higher work satisfaction and organizational

commitment than feedback alone; and Stansfield and Longenecker (2006) found goal setting coupled with timely feedback led to the establishment of challenging goals. Their finding led them to suggest that interventions which facilitate feedback and goal setting are more effective than traditional supervision systems at improving performance. Alvero et al.'s (2001) objective review of the feedback literature provided further support for this proposition as they concluded the addition of goal setting significantly impacted the consistency of feedback's effectiveness.

While the impact of goal setting is undeniable, moderators of goal setting's impact on performance have surfaced in the literature and should be considered with respect to developing feedback interventions within organizations. It is clear from the copious amount of empirical research that when specific and difficult goals are accepted and committed to, they will lead to higher performance as compared to vague and easy goals (e.g., Locke & Latham, 1990; Locke, Shaw, Saari, & Latham, 1981; Locke, 1968). Additionally, Earley et al. (1990) found that the type of feedback provided in combination with goal setting did moderate the goal setting-performance relationship. Specifically, process feedback (refers to information regarding the task process used to produce an end result) was more strongly related to quality of information search and task strategy than the interaction of goal setting with outcome feedback (information regarding the end result of a task process). However, the interactive effect of goal setting with outcome feedback was more strongly related to self-confidence and effort. Algera, Kleingeld, and van Tuijl (2002) posit that effective goal setting and feedback systems include both outcome feedback and process feedback.

Goal setting is sometimes considered a complimentary theory to control theory. Control theory is differentiated from goal setting theory by the inclusion of a negative feedback loop (Carver & Scheier, 1998). This negative feedback loop results from comparison of performance feedback to some goal or standard for performance. When there are discrepancies between performance feedback and that standard, action will be taken to close the gap. Thus, accurate, specific, and timely feedback is critical to control theory. The basic notion is to control the situation by matching the feedback to the standard. This requires both to be present in the system. In parallel with goal setting, specific and difficult objectives are more effective than "do your best" objectives because a discrepancy occurs more often. The objectives (like goals) are not static but can be adjusted in accordance with the feedback. A discrepancy can be reduced by improving performance through increased effort and the use of alternative strategies or by lowering or abandoning the goal (Carver & Scheier, 1998).

There is some debate as to whether feedback can motivate in absence of formal goals (Locke, 1968; Pritchard et al., 1989). Kopelman's (1986) review found few differences between cases where feedback was paired with formal goal setting and cases that did not include formal goal setting. While other interventions that use feedback may not explicitly set goals, they may include intention formation. Intention formation involves forming a conscious intention to complete a task or try harder but may not include a specific level of output (Frese & Zapf, 1994; Locke & Latham, 2002). Carver and Scheier (1998) claim that humans are goal driven and argue that people not only use goals but also intentions, values, and wishes to direct our daily lives

forward. Thus, it is arguable that some form of intention formation or goal setting is critical to the effectiveness of feedback intervention.

The issue of dealing with multiple and often competing goals is the crux of some critics of goal setting and control theory. Campion and Lord (1982) suggest two ways to handle the problem of multiple goals; ordering goals according to their priority and attending to goals consecutively or developing different tolerances for goal-performance discrepancies so that more important goal-performance gaps would be detected more rapidly. Evidence supports the effectiveness of two unique feedback interventions with built in mechanisms for dealing with multiple goals, management by objectives (MBO and the Productivity Measurement and Enhancement System or ProMES). Management by objectives programs are based on formal goal setting (Rodgers & Hunter, 1991) whereas ProMES does not expressly include formal goal setting as a fundamental aspect of the system (Pritchard et al., 2008). It could be argued that their success is based in part on their ability to effectively manage feedback from multiple goals or intentions.

The Productivity Measurement and Enhancement System is an intervention designed to enhance employee motivation and productivity through performance measurement and feedback, most often at the group level (Pritchard, 1990; Pritchard, et al., 2008). Developing and implementing ProMES requires a highly collaborative approach. A design team is composed people who will ultimately use the measurement and feedback intervention (employees within the target unit and supervisor(s) from that unit) and a ProMES facilitator will identify the critical unit objectives and decide how those objectives are best measured in an effort to create a system

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for providing meaningful, accurate, and useful feedback for performance improvement efforts. The indicators of performance can be weighted based on priority and aggregated into a single index of performance that can be tracked over time. According to Pritchard et al. (2012) this feedback helps employees estimate where they stand, while also providing more granular feedback for pinpointing those areas of performance in need of improvement and making adjustments. Additionally, ProMES is capable of delivering information regarding performance that is non-linear in nature. For instance, once a certain level of performance is achieved on a particular indicator of performance, the effectiveness of allocating more energy to that dimension of performance may diminish. Pritchard, Youngcourt, Philo, McMonagle, and David (2007) found, when given the opportunity, employees can and do use complex, nonlinear priority information and simple linear relative importance data as intended. As such, feedback content should include information regarding the relative importance of different performance standards.

In sum, feedback content should be evaluative in nature, allow for strategy development (e.g., goal-setting, action planning), provide illustrative information regarding performance and priorities, and be perceived as valid (e.g., job relevant, controllable).

Feedback Delivery

Feedback delivery involves the structure, policies, and procedures guiding the timing and frequency of feedback administration. Feedback availability (i.e., frequency, amount, accessibility) and participation levels are central characteristics of the feedback delivery process. Such characteristics are often linked to due process and justice reactions. Like organizational justice theories, due process considerations in performance appraisal have generally been divided

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into two categories concerning: (a) interpersonal exchanges between supervisors and employees; and (b) structure, procedures, and policies of the appraisal system (Folger, Konovsky, & Cropanzano,1992). Due process in performance appraisal can include such behaviors as giving employees adequate notice (e.g., explaining standards in advance, getting input from employees), fair hearing (e.g., opportunity to explain self-evaluations), and judgment based on evidence (e.g., opportunity to appeal; Findley, Giles, & Mossholder., 2000). Frequency of evaluation has also been supported as an antecedent of justice perceptions (Chobbar & Wallin, 1984; Landy, Barnes, & Murphy, 1978; Findley et al., 2000).

Research suggests that participative feedback interventions can have real benefits for organizations. For example, a meta-analysis by Cawley, Keeping and Levy (1998) found a strong overall positive relationship between participation and employee reactions (e.g., satisfaction) to performance appraisals. Further, Zuber and Behson (1989) found that opportunity to participate in the performance appraisal process has a stronger relationship with ratee reactions (i.e., perceived fairness and satisfaction with the rater, session, and system) than does actual participation at a statistically significant level. Based on their findings, it seems that perceiving the ability to participate and being invited to participate may be just as (if not more) important than actually being involved in the discussions. Perceptions of voice and procedural justice in the performance appraisal process have also been linked to perceived organizational support (Erdogan, 2002), satisfaction with the appraisal process (Korsgaard & Roberson, 1995; Greller, 1975; Silverman & Wexley, 1984), motivation and job satisfaction (Wexley, Singh, & Yukl, 1973), and reactions towards one's workgroup (Chen, Wu, & Leung, 2011). Further, Dipboye

and Pontbriand (1981) found that feedback recipients were more accepting of negative feedback when it was perceived as participative. Employee voice during the performance appraisal and justice perceptions have also been shown to mediate the relationships between leader-member exchange (LMX) and feedback reactions (i.e., perceived accuracy and utility of the feedback and motivation to improve; Elicker, Levy, & Hall, 2006). While participatory processes may be more demanding to enact (Lizzio et al., 2008) the impact on justice perceptions and subsequent performance and attitudinal outcomes may make the effort worthwhile.

Feedback availability refers to the frequency and timeliness of performance information. Timely feedback has been empirically linked to satisfaction with performance appraisal (e.g., Ilgen, Peterson, Martin, & Boeschen, 1981), improved work performance, greater efficiency, and establishment of more challenging goals (Stansfield & Longenecker, 2006), and feedback usefulness (Young & Kline, 1996). Further, regularly occurring feedback has been found to influence work performance (Kuvaas, 2011). The frequency of feedback is also linked to important outcomes; reactions of fairness and accuracy (Landy et al., 1978), satisfaction (Ilgen et al., 1981), and rating favorability (Pichler, 2009). As such, it appears critical that feedback is timely and delivered on a frequent and regular basis.

A final process consideration is the medium employed to deliver feedback. While numeric ratings of performance are useful, narrative comments provide critical supplemental information regarding context-specific aspects of task performance (Govaerts, van de Weil, & van der Vleuten, 2013). Contextual comments can be delivered verbally and/or in writing and include information about strengths and opportunities for development in relation to meeting

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goals. In their objective review of the effectiveness of several feedback characteristics, Alvero et al. (2001) identified and reported the effectiveness of several means used to deliver feedback (e.g., graphs, verbal, written, combinations of graphs, verbal, and written). While written feedback delivery was most common, graphs with verbal feedback and graphs with written feedback were more consistently effective. Thus, it appears that it may be useful to not only supplement numeric feedback with comments but to also provide a visual representation.

To summarize, effective feedback delivery characteristics include the timing and availability of information and the amount of real or perceived participation in the process.

System Commitment

System commitment refers to behavior indicative of the feedback intervention's importance to the organization. The behaviors are observed through daily interactions between members in an organization (Steelman et al., 2004) and may include observation of leadership support for formal feedback system training and incentive opportunities, and the periodic auditing and maintenance of the system. Levy and colleagues (Norris-Watts & Levy, 2004; Rosen, Levy & Hall, 2006; Whitaker, Dahling & Levy, 2007) have found employees' reactions to their feedback environment to have serious implications for feedback reactions (e.g., increased feedback seeking) and key organizational outcomes (e.g., organizational citizenship behavior, affective commitment, morale, and performance). For example, higher quality feedback environments were related to lower perceptions of organizational politics and various performance criteria (Rosen et al, 2006). Similarly, Sparr and Sonnentag (2008) not only found feedback environment to be positively related to job satisfaction, personal control over

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information and decisions, but also negatively related to helplessness, job depression, and turnover intentions. These findings suggest that when acceptable and useful information regarding performance is accessible and perceptions of organizational politics are reduced, desirable work outcomes can be enhanced, and undesirable work outcomes reduced.

As discussed previously, an employee's level of understanding of the feedback intervention can influence their perceptions of procedural justice. For example, Williams and Levy (1998) found a strong relationship between employees' levels of perceived system knowledge (PSK) and their appraisal reactions, fairness perceptions, and job attitudes. Perceived system knowledge was also positively related to organizational commitment, when performance rating was held constant. Further, Roberson and Stewart (2006) found that procedural justice perceptions mediate the motivating effects of feedback because such justice stems from receiving clear reasons for outcomes. The preceding evidence suggests it is critical to provide system training to all end users.

When supervisors are inadequately trained to appraise performance, employees often feel that ratings are biased and unfair assessments of their contributions (DeNisi & Sonesh, 2011). Training can take many forms but frame of reference training (providing raters with a shared theory of performance and rating standards) appears particularly effective at improving accuracy of performance appraisal (Woehr & Huffcutt, 1994). In addition to training, supervisors should be held accountable for the accuracy and usefulness of the feedback they provide (London 2003). When not held accountable, it is likely they will devote little attention and effort to delivering high quality feedback (Thomas & Bretz, 1994). Accountable supervisors have been found to

attend to and document more performance information, report being more engaged in performance management tasks, and provide more accurate ratings than those who are not held accountable (Mero & Motowidlo, 1995). Thus, those who generate and deliver feedback should receive proper training regarding evaluation and feedback delivery and be held accountable for the feedback interventions they are expected to employ.

Finally, Levy and Williams (2004) suggest that a variety of distal variables that have received very little research attention such as technology, HR strategies, and economic conditions may be important considerations toward enhancing our understanding of the feedback process. Of the HR strategies to consider, organizational reward structures and philosophy may play an important role. As an example, supervisors should be rewarded for effectively managing their subordinates through accurate and useful feedback. To illustrate, Harackiewicz and Larson (1986) found that the feedback provided to subordinates by their supervisors was influenced by whether or not the supervisors were themselves rewarded for maintaining their subordinates' task enjoyment. As such, the performance management and reward structure should convey to supervisors and managers the importance of utilizing the organization's feedback interventions toward their subordinates' performance improvement. As mentioned at the beginning of this dissertation, in order for feedback interventions to work effectively they must measure valued behaviors and be accepted and supported by all parties involved.

In sum, system commitment is displayed through the behaviors of organizational management and supervisors. Behaviors such as system monitoring and maintenance, and the provision of incentives and system training convey the importance of an intervention.

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Feedback Source

Feedback sources can be external or internal to the feedback recipient. Greller and Herold (1975) empirically identified the formal performance appraisal, supervisors, co-workers, task, and self as being the most common sources of performance feedback. The self was most heavily valued followed by the task, supervisor, coworkers and organization, respectively. Similarly, Earley (1988) found that internally generated and specific feedback was positively related to performance (as compared to supervisor generated feedback). Prue and Fairbank (1981) discuss the delivery of continuous performance data via mechanical devices. Such feedback can provide an employee with a continuously generated record of daily output and potentially increase performance. However, while a task can directly provide a certain amount of feedback (Hackman & Oldham, 1976), task generated feedback in isolation cannot always convey an adequate sense of overall performance. Greller and Parsons (1992) found that task generated feedback is relied upon most heavily for evaluating one's own performance, but feedback from the organization (e.g., supervisors) is used to adjust the way information from the task is used.

Employees must refer to other sources for at least supplementary performance feedback and the supervisor may become the primary source; especially when a task is novel, or objective performance criteria are unavailable (Harackiewicz & Larson, 1986). Considering that supervisors negotiate with subordinates to establish performance expectations (and many times set them without negotiation) and administer rewards for meeting those expectations one might conclude that performance feedback from supervisors is likely to have the greatest influence on employee behavior at work (Becker & Klimoski, 1989). Supporting evidence includes Balcazar

et al. (1985) finding that feedback from one's supervisor is more consistent in improving

performance than feedback from other sources. Further, Andrews and Kacmar (2001) found that

feedback from supervisors predicts job satisfaction and role ambiguity.

Research has focused on the supervisor's function in the feedback environment because

the supervisor's role offers more opportunities for organizational intervention (Anseel &

Lievens, 2007). Support for the influence of source on recipient reactions was found by Zuber

and Behson (1998). Results from their meta-analysis indicate that rater credibility, job

knowledge, quality of the relationship between the rater and ratee, and supportiveness have

medium to large correlations with ratee reactions (e.g., perceived fairness, accuracy and fairness,

utility, and satisfaction with rater, system, and session). Reactions to supervisor feedback largely

depend on the supervisor's perceived system knowledge (e.g., understanding of the goals,

expectations, and metrics used to evaluate performance; Williams & Levy, 1992) and the nature

of the supervisor's relationship with the feedback recipient. Beer (1981) posited that without a

good supervisor-subordinate relationship, a performance appraisal system cannot be effective.

Giffin (1976) identified five dimensions of source credibility; (a) expertise, (b) reliability,

(c) intentions toward the listener (trust; counselor versus judge), (d) dynamism (boldness,

energy), and (e) personal attraction. These characteristics have implications for how subordinates

perceive feedback intentions (Fedor, Buckley, & Eder, 1990) and their reactions to feedback.

When employees view feedback as coming from an expert, attractive, and trustworthy source

they may be more apt to react constructively (e.g., use suggestions from the source) to both

favorable and unfavorable feedback in an effort to reduce dissonance induced by the feedback (Ilgen et al., 1981; Bannister, 1986; London, 2003).

To further explore the influences of source-recipient relationships on reactions to feedback, recent research has explored the influences of leader-member exchange (LMX). According to LMX, each supervisor-subordinate relationship is viewed as a unique dyadic social exchange process (Graen & Uhl-Bien, 1995). Compared to low-LMX members, high-LMX members receive more attention and resources from their supervisors. Consequently, high LMX-members may be more likely to participate in feedback meetings with greater levels of trust in their supervisors, greater self-efficacy, and a better understanding of the appraisal and feedback process (perceived system knowledge) (Elicker et al., 2006).

Elicker et al. (2006) empirically supported a model that may provide insight into the psychological mechanisms by which high LMX relationships influence desirable feedback reactions (i.e., appraisal satisfaction, motivation to improve, perceived accuracy, and perceived utility). In their model, high LMX-appraisal reaction relationships are mediated by perceptions of voice during the appraisal process and justice post appraisal. Evidence from other researchers lends further credence to this model. For example, Erdogan (2002) found pre-appraisal LMX to be an antecedent of justice perceptions in performance appraisal. Alternatively, LMX has also been found to mediate the relationship between perceived fairness of feedback and job satisfaction, feelings of control at work, job depression, and turnover (Sparr & Sonnentag, 2008) and the relationship between justice perceptions and feedback reaction (Feys, Libbrecht, Anseel & Lievens, 2008).

Perceptions of interactional justice also have consequences for organizational feedback. Interactional justice refers to the degree to which people perceive they are treated with dignity, concern, and respect (Robbins & Judge, 2009). These perceptions may be influenced by supervisors' behaviors during feedback sessions. It may be beneficial to teach controlling managers counseling techniques. Specifically, they should learn to recognize, clarify, and accept subordinates' expressed feelings during feedback interventions.

To summarize, the feedback source(s) should be deemed as credible and supportive. It is also beneficial for the primary source to consider information from multiple inputs (e.g., task, customers, co-workers, other supervisors).

<u>Feedback Acceptance</u>

The previous section reviewed the literature regarding the influence of feedback intervention characteristics on employee reactions and organizational outcomes. This section will explore the concept of feedback acceptance. Feedback acceptance will be discussed in terms of cognitive and affective reactions to feedback intervention. Despite inconsistent definitions and measurement of feedback acceptance in the literature, it is regularly found to be an important reaction (Kedharnath, Garrison, & Gibbons, 2010). For example, Roberts and Reed (1996) found acceptance to be key to the relationship between perceptions of system characteristics and system satisfaction and performance outcomes. Research done in a selection context by Anseel and Lievens (2009) provided evidence for the mediating role of feedback acceptance in the relationship between receiving informative feedback on a personality test and attitudes toward the hiring organization. In a second study done in a training context they found that participants

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reporting higher accuracy of feedback on an in-basket exercise scored better on a subsequent test, feedback acceptance partially mediated the effect. These studies highlight the impact of feedback acceptance on both attitudinal and performance outcomes. When feedback is accepted and internally attributed, recipients are likely to set meaningful, realistic goals that have the potential to improve their performance (Taylor et al, 1984).

While most researchers include accuracy in their operationalization of acceptance, many additional dimensions have been considered including: (a) perceptions of clarity, usefulness, and specificity; (b) agreement with the source; (c) intentions to act on the feedback; (d) fairness; (e) state affect and satisfactions toward the feedback; and (f) achievability or the belief that performance can be improved (Kedharnath et al., 2010). These dimensions include perceptions of feedback intervention characteristics (e.g., clarity, specificity), cognitive reactions (e.g., fairness, achievability), and affective reactions (e.g., state affect, satisfaction). It could be argued that characteristics such as clarity and specificity drive cognitive reactions such as accuracy and acceptance; and that satisfaction may be elicited from such cognitive reactions. However, one could also argue that nonlinear processes occur between cognitive and affective reactions. Meaning, it is also possible that affective reactions influence cognitive reactions. While it is helpful to distinguish between facet and global level measurement and the relationships between cognitive and affective reactions, it is beyond the scope of this dissertation to do so at length. As such, the commonly cited operationalizations of acceptance are categorized by reaction type and discussed below.

Cognitive Reactions

Cognitive reactions involve information processing, interpreting, and decision making about the merits of the feedback and feedback process (Shrauger, 1975) and are based on actual experience with performance appraisal or feedback intervention (Wright, 2004). Anderson and Jones (2000) posit that an individual's cognitive interpretations of feedback influence reactions to it as much as its objective content. Cognitive reactions have been discussed as five responses to feedback; (a) assessment of feedback accuracy, (b) evaluation of source credibility, (c) evaluation of feedback intervention fairness, (d) formation of expectancy belief or the belief that performance change or maintenance is achievable, and (e) changing behavioral (goal) standard (Taylor et al., 1984). Similarly, Ivancevich (1982) empirically derived three cognitive appraisal interview reactions; (a) equity, (b) accuracy, and (c) clarity. In line with these categorizations, Keeping and Levy (2000) identified perceived accuracy and perceived utility as important cognitively oriented appraisal reactions. Such perceptions influence whether feedback will be accepted and ultimately used toward performance improvement. Considering the potential impact cognitive reactions to feedback intervention can have, it is important to identify the intervention characteristics that are likely to stimulate these positive reactions. The most commonly cited cognitive reactions are described in more detail below.

Accuracy

Accuracy is the degree to which appraisal ratings are perceived to correctly reflect a ratee's actual job performance (Folger et al., 1992; Zuber & Behson, 1998). Ilgen et al. (1979) contends that recipients are more likely to accept feedback if they believe it accurately portrays

their performance. As such, feedback acceptance has been most commonly defined as, "the recipient's belief that the feedback is an accurate portrayal of his or her performance" (Ilgen et al., 1979, p. 356). System characteristics such as simplicity have been linked to perceived accuracy of performance ratings (Zuber & Behson, 1998).

Prior feedback reaction research has found a very strong positive association between accuracy and fairness or justice reactions (e.g., Roberson & Stewart, 2006; Kedharnath et al., 2010). As such, measures of feedback reactions are often a composite of accuracy and fairness (e.g., Landy et al., 1978). When these reactions are measured as a composite, they have been found to be highly related to system characteristics such as source credibility, participation, career discussion, goal-setting, specificity and relevance (Zuber & Behson, 1998).

Fairness

It is hard to conceive a circumstance where someone felt their feedback was not accurate but still fair; however, Kendharnath (2010) found that although these factors are highly correlated ($r = .92$) combining the scales reduced the overall fit of their multidimensional feedback acceptance model. Their findings suggest a possible distinction can be made between the two and imply some value in considering them separately. Fairness has been defined as the degree to which appraisals of performance are deemed to be just or equitable (Zuber & Behson, 1998). Equity theory (Adams, 1965) hypothesizes that people assess fairness by examining their input (e.g., effort, time) to output (e.g., pay, status) ratio as compared to referent others' input to output ratios. Ratio inequity is thought to be unpleasant and cause tension. Accordingly, the person making the comparison will seek to relieve the tension by increasing or decreasing their

inputs or cognitively distorting their outputs. Equity theory has been criticized as not being particularly useful (e.g., Locke & Henne, 1986) as it is difficult to specify what action(s) a person experiencing inequity will take. Hence, organizational justice theories have expanded what is meant by equity in the workplace to incorporate not only distributive justice but also procedural and informational justice.

Justice theories explain how people perceive injustices within the workplace. Considering Landy, Barnes-Farrell and Cleveland's (1980) contention that the effects of feedback are dependent upon perceptions of fairness and accuracy, justice theories are particularly useful for examining organizational feedback interventions. Distributive justice, like equity theory, focuses on fairness with respect to outcomes. However, procedural justice is the perceived fairness of the process used to derive the outcome distribution. Procedural justice elements such as process control and explanations have identifiable implications for feedback interventions. Process control refers to the ability to present one's views or have a voice about desired outcomes (Robbins & Judge, 2009). As previously discussed, antecedents of fairness perceptions include due process characteristics such as frequency of evaluation (Chobbar & Wallin, 1984; Landy et al., 1978), identification of goals to eliminate weaknesses, supervisor knowledge of a subordinate's performance level and job duties (Landy et al., 1978) and perceived participation during system development and feedback discussions (e.g., Cawley et al., 1998; Zuber & Behson, 1998).

<u>Achievability</u>

Achievability, "the perceptions of the attainability of improvements suggested by feedback," is also very strongly linked to both accuracy and justice reactions (Kedharnath et al., 2010, p. 6). Achievability is rooted in self-efficacy, the belief in one's capability to succeed at particular behaviors that lead to expected outcomes (Bandura, 1982). These beliefs, established through cognitive processes (observation of others and self-perception), influence decisions about whether an individual will act out the behavior(s). Self-efficacy is often situation dependent and impacted by a variety of factors, including feedback (Nease, Mudgett, & Quinones, 1999).

<u>Utility</u>

Utility is another commonly measured reaction to feedback. Utility for performance appraisal has often been conceptualized as the degree to which ratees believed their feedback was helpful (e.g., toward improving their performance, clarifying performance expectations; Zuber & Behson, 1998; Keeping & Levy, 2000). Several system and contextual characteristics have been found to impact utility reactions. For example, Jawahar (2010) found that source job knowledge and use of criticism, job relatedness of the performance criteria, inclusion of goal setting, and the suggestion of strategies for improvement were substantially related to perceptions of the feedback's usefulness for improving performance. Further, utility has been found to impact loyalty and personal and career development (Reis, 2002) and affective organizational commitment (Kuvaas, 2011).

Affective Reactions

Like cognitive reactions, affective reactions influence the effectiveness of feedback intervention. Affective reactions to feedback are primarily emotional responses prompted by a variety of feedback intervention characteristics such as sign, amount received, and congruence between the recipient's expectations and the actual message of the feedback (Anderson & Jones, 2000). Satisfaction with feedback intervention is the most commonly measured affective reaction, but researchers have also measured affective reactions by asking feedback recipients to indicate the extent of their positive (e.g., encouraged, pleased) and negative (e.g., disappointed, frustrated) emotions post feedback (e.g., Bell & Arthur, 2008). Atwater and Brett (2006) found that positive reactions led to more favorable future performance evaluations. Both satisfaction and affect will be described in further detail below.

Satisfaction

Satisfactions are "feelings or affective responses to facets of the situation" (Smith, Kendall, & Hulin, 1969, p. 6) and may be regarded as one of the most consequential reactions to organizational feedback intervention (e.g., Giles & Mossholder, 1990; Keeping & Levy, 2000). In fact, recent evidence found that satisfaction with several feedback intervention features was positively related to subsequent job performance (Jawahar, 2006, 2010) and job satisfaction and organizational commitment, and negatively related to turnover intentions (Jawahar, 2006). Similarly, Kuvaas (2006) revealed that performance appraisal satisfaction was directly related to affective organizational commitment and turnover intent. Further, Russell and Goode (1988) found a relationship between appraisal satisfaction and motivation to improve job performance

and performance ratings. They also supported the inclusion of satisfaction in measures of feedback acceptance. These findings supports the Ilgen et al., (1981) suggestion that reactions to feedback do not occur in a "vacuum," meaning they factor into one's complete perception of the work experience. Additionally, Jawahar (2006) posits that satisfaction with feedback may better predict future job performance than the feedback itself. Satisfaction with feedback is often operationalized as satisfaction with the appraisal session and system (e.g., Giles & Mossholder, 1990) but reactions to the source are rarely measured (Waung & Jones, 2005). However, satisfaction with appraisal feedback is highly correlated with satisfaction with supervisor (e.g., Giles & Mossholder, 1990; Jawahar, 2006).

<u>State Affect</u>

The feedback session could be considered an affective event within the framework of affective events theory (AET; Weiss & Cropanzano, 1996). According to AET, employees emotionally react to events that occur to them at work. For example, research findings by Ilies, De Pater, and Judge (2007) found that performance feedback can influence both positive and negative state affect within individuals. Specifically, negative feedback regarding goal attainment increased negative affect, and to a lesser extent positive feedback increased positive affect. Further, neurological evidence for affective reactions was indicated by Kim et al. (2010). They found that brain regions associated with negative affect were recruited during norm-referenced feedback among study participants with low-competence participants, and during criterion-referenced feedback only among the high-competence participants. Because affect can influence behaviors such as goal setting activities post feedback (Ilies & Judge, 2005) it would

be beneficial to identify and better understand the feedback system characteristics that influence affective reactions.

Behavioral Reactions

Wright (2004) contends that behavioral reactions to feedback are based on cognitive and affective reactions to the appraisal and feedback experience. These reactions can result in changes in levels of commitment, participation, involvement, performance, turnover, absenteeism, and motivation. Behavioral reactions to feedback include: changing the direction of behavior, altering effort, changing task persistence, and responding against the feedback intervention (Taylor et al, 1984). For example, when feedback reveals a gap between current performance and organizational standards, the recipient may be motivated to decrease that discrepancy. In order to do so, individuals may try new methods or strategies, or increase or decrease effort. Kluger and DeNisi (1996) contend that effort will be increased if the feedback is negative, and decreased or maintained if the feedback positive. Based on expectancy theory, if the recipient feels they have the ability to perform at the standard, they will be more inclined to continue reaching for that standard (Taylor et al, 1984). The following section will discuss perhaps the most proximal and critical behavioral reaction to feedback intervention, motivation.

Motivation

Previous researchers have operationalized feedback effectiveness as a variety of distal outcomes including; retention of good performers and rehabilitation of poor performers (Roberts, 1992), organizational commitment (Farndale et al., 2011; Cawley et al., 1998; Giles & Mossholder, 1990; Ilgen et al., 1979; Larson, 1984), enhanced productivity (Roberts, 1992), and

performance improvement (Larson, 1984; Roberts, 1992). However, Diefendorff and Chandler (2010) describe feedback as a proximal, external influence on motivation. In line with these contentions, Pritchard (1990) posits that the mechanism by which feedback improves performance is primarily motivational. Hence, the focus of this section is on the motivational experience that can come from efficacious feedback intervention. Authors have regularly argued that feedback interventions are effective when they provide directional and motivational functions (e.g., Locke et al., 1968) or cueing and motivational functions (Nadler, 1979). Researchers have found that certain aspects of feedback interventions can positively influence recipient motivation (Bartol, Durham, & Poon, 2001; Dorfman et al.,1986; Roberts, 1992).

While there are a great variety of approaches used to study motivation, theorists tend to agree that motivation is a force that directs, energizes, and sustains human behavior. As such, motivation plays a key role in performance and other work behavior. This section is not intended to be comprehensive review of motivation, but to instead highlight the prominent motivational approaches and theories that may best illustrate the motivational aspects of feedback. Such a review is intended to provide a theoretical framework for examining motivation as an outcome of experience with feedback intervention and as a mechanism through which feedback influences job performance among other important organizational outcomes. Goal setting theory will not receive attention in this section as goal setting has already been discussed as an important feedback content characteristic. Similarly, justice theories will not be included in this section as justice has been discussed as a cognitive reaction in earlier sections of this paper.

Reinforcement theory contends that behavior is determined by its consequences (Thorndike, 1911). When rewarded, the probability of behavior increases. Conversely, when behavior results in negative outcomes, the probability of that behavior will decrease. Based on this theory, pairing feedback with outcomes over time may convert the feedback into a secondary reinforcement whereby the outcome would no longer be necessary when feedback is present (London, 2003). Kluger and DeNisi (1996) contend that hypotheses about feedback interventions primarily originated from Thorndike's law of effect before more contemporary theories of motivation came along. The problem with reinforcement theory is that it is too parsimonious to explain the process by which motivation occurs. Thus it is difficult to explain how, when, and why feedback interventions work.

Job characteristics theory (Hackman & Oldham, 1976) is an approach to work motivation through job design. The job characteristics model (JCM) consists of five core job characteristics, three of which are task-related characteristics (i.e., task identity, skill variety, and task significance) and two are management-related characteristics (i.e., autonomy and feedback). These core job characteristics impact three critical psychological states; (a) experiencing meaningfulness of work, (b) experiencing responsibility, and (c) knowledge of results. The overall outcome of the model is internal work motivation.

Feedback refers to the degree to which job performance results in direct and clear information regarding the effectiveness of the performance (Hackman & Oldham, 1976). Feedback is hypothesized to influence both job satisfaction and work effectiveness, especially via the mediating psychological state deemed knowledge of results. This characteristic has been

shown to possess a positive relationship with subjective and objective performance, job and growth satisfaction, and absenteeism (Fried & Ferris, 1987; Humphrey et al., 2007; Kulik, Oldham, & Langner, 1988). Fried and Ferris (1987) concluded from their meta-analytic findings that feedback would be the best intervention strategy because it has more general effects on both satisfaction and performance than the other four job characteristics from the model. While empirical evidence for the JCM concludes that feedback is related to knowledge of results and a variety of organizational outcomes, most of the research is based on correlational study design which does not allow causal inference.

Vroom (1964) based his conception of expectancy theory on the assumption that people make rational cognitive decisions about their work behavior. His Valence-Instrumentality-Expectancy (VIE) model presumes that employees choose among alternative work behaviors (e.g., work overtime) and decide to apply effort to the tasks they believe they can perform that will lead to attractive outcomes (e.g., bonus). The model is composed of outcomes, valence of those outcomes, effort-performance expectancy (also referred to as expectancy), and performance-outcome expectancy (also called instrumentality). The expectancies and the valence of the various outcomes influence motivational force in a multiplicative fashion. If any one of the components is low, motivation to perform the work behavior will be low (Steers, Porter, & Bigley, 1996). From a feedback perspective, one can see how information about performance could influence whether or not someone would expect increased effort to lead to desired performance (effort-performance expectancy). When feedback interventions are tied to outcomes, such systems will inform employees as to whether performance of a behavior will

lead to a desired outcome (performance-outcome valence). Unfortunately, VIE has little empirical support (e.g., Van Erde & Thierry, 1996).

The Pritchard-Ashwood (P-A; 2008) model of motivation, an enhancement to the Naylor, Pritchard, and Ilgen (1980) NPI theory, expands upon existing expectancy theories by incorporating many constructs from other motivation theoretical orientations (e.g., needs theories, self-regulation theories, reinforcement theory, and equity theories) to derive a more holistic approach to studying motivation. Pritchard and Ashwood (2008) define motivation as the process of allocating energy (in the form of time and effort) across tasks with the expectation of satisfying needs. The process occurs across a series of connections; (a) effort is applied to action, (b) the actions produce specific results, (c) these results are evaluated, (d) specific outcomes occur from these evaluations, and (e) the outcomes satisfy certain needs. Motivation is high when these connections are strong. Performance appraisal and feedback interventions that can enhance these connections, particularly the action-results connection, will benefit from greater performance improvement.

The Productivity Measurement and Enhancement System (ProMES) was designed to enhance motivation as defined by the Pritchard-Ashwood Model. Based on the feedback reaction literature, such a system is likely to be perceived as procedurally just because of the participatory nature of its design and delivery of feedback. Additionally, employees may build stronger relationships with their supervisors while participating on the design team and, as mentioned earlier, employee-supervisor relationships can impact how feedback is received by the subordinate. Further, employees should view such a system as procedurally just because ProMES

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requires the indicators of performance be comprised of only those things employees can control or mostly control (Pritchard et al., 2002). Finally, because feedback from ProMES is intended to be easy to interpret employees should clearly be able to follow how their actions should lead to desirable outcomes and ultimately need satisfaction.

Measures incorporated into feedback interventions are not neutral; they convey what is important to the organization. Thus, it is critical that the design team capture all of the important criteria and standards and make sure they are aligned with broader organizational objectives. An advantage of ProMES over goal-setting interventions is that ProMES can easily measure process and outcome data and feed it to employees using the same scale. Conversely, goal setting is primarily focused on outcome data.

<u>Summary of Literature Review</u>

Feedback interventions present users with several systemic stimuli regarding their design, structure, and operation. The preceding review presented several well-researched characteristics of feedback intervention, discussed the impact perceptions of and reactions to (e.g., accuracy, fairness, satisfaction) these stimuli can have on critical organizational outcomes (e.g., job performance and satisfaction, organizational commitment, firm profit), and highlighted the motivational principles of feedback intervention. Several findings in the extant feedback and performance appraisal literatures were presented to support these links. Considering the varied and consequential reactions to perceptions of feedback system characteristics, sound measurement is imperative to further our understanding through empirical research. As such, the

following chapter discusses current approaches to measurement and the need for a new

instrument.

CHAPTER THREE: AUDITING FEEDBACK INTERVENTIONS

Current Approaches to Measurement

The general research approach in the feedback and performance appraisal literatures is to test the relationship between one (or few) system characteristic and one (or few) outcome at a time. Unfortunately, this approach largely ignores the complexity of feedback intervention (Mulder & Ellinger, 2013) and has led to the creation of disjointed and unreliable measures. Where researchers have attempted to measure perceptions of multiple characteristics at a time, they often employed single item measures of variables, calculated composite scores that included perceptions of several characteristics across system components, and did not submit their measures to construct validation efforts. For example, Dipboye and de Pontbriand (1981) measured employee opinions of their latest performance appraisal, the appraisal system, and attributes of the appraisal process (i.e., participation and goal orientation) with twelve Likert scale items. Several system characteristics were measured with single items. This scale has been criticized for emphasizing identifiable correlates of satisfaction with the feedback session and neglecting objective characteristics of appraisal and feedback (Mount, 1983).

Similarly, Landy et al., (1978) created a twelve item measure dealing with quality, frequency, and consequences of performance evaluation; and Burke et al., (1978) created an eight item scale to measure eight characteristics (i.e., amount of threat experienced, balance between job performance and personality, proportion of time spoken, influence, participation, constructive and helpful supervisor, solving job problems, and goal setting) of effective performance review interviews. Like Dipoye and de Pontbriand's (1981) measure they use single

items to represent variables (e.g., frequency, participation) and mix measurement of objective

system characteristics with global reaction measurement. Despite the lack of sufficient validity

evidence for these measures, they have influenced the development of other instruments. For

example, Evans and McShane (1988) wrote thirty-eight items derived from previous studies (i.e.,

Burke et al., 1978; Dipboye & de Pontbriand, 1981; Landy et al., 1978) to measure; (a)

participation, (b) goal setting, (c) source knowledge, (d) relevance of rating criteria, and (e)

appraisal frequency and follow-up. Several other researchers have used similar approaches (e.g.,

Dobbins, Cardy, & Platz-Vieno., 1990; Fulk, Brief, & Barr, 1985; Leung et al., 2001).

Unfortunately, there is also a general lack of consensus as to which variables should be

measured; and where there is consensus, a lack of consistency with regard to the

operationalization of constructs (Zuber & Behson, 1998). As a result measures are fragmented

and a common comprehensive measure of feedback system characteristics does not exist.

Another typical approach to measuring the effectiveness of feedback interventions is to

focus on global cognitive and/or affective reactions and disregard more direct assessment of

specific system characteristics (e.g., Feedback Evaluation Questionnaire; Bell & Arthur, 2008).

While some researchers have integrated the measurement of several global reactions (e.g.,

Feedback Perceptions Questionnaire; Strijbos, Narciss, & Dunnebier, 2010; Raemdonck &

Strijbos; 2013), many studies often focus on single reactions such as usefulness (e.g., Greller,

1980), acceptance (e.g., Anseel & Lievens, 2009), or satisfaction (Mount, 1983). Such study has

merit but again disregards the complexity of feedback intervention. Additionally, a focus solely

on global reactions neglects practicality issues. In other words, it is more difficult for

organizations to directly influence an employee's cognitive reactions or affect than it is to change contextual and system variables. Further, many studies use single-item measures to represent these reactions (Mount, 1983), which does not allow for estimation of internal consistency. When multi-item measures have been used, the scales used to measure global reactions such as satisfaction, accuracy and fairness are often confounded (Jawahar, 2010). Unfortunately, research in this area has generally failed to address such validity issues before testing hypothesized relationships (Kinicki et al., 2004).

Despite the typical approach to measurement described above, there have been some commendable attempts at measurement development and validation. The following section is intended to compare and distinguish between existing audits of feedback intervention and the measure developed for this study; the Feedback Intervention Perceptions Scale (FIPS). Considering the inconsistent manner in which unidimensional and single item measures have been combined by previous researchers, only multidimensional measures that have gone through some form of validation process are discussed below.

Feedback Assessment Questionnaire

The (FAQ) measures perceptions on four dimensions of performance feedback; timeliness, specificity, frequency, and sensitivity of manager's performance feedback (Ilgen et al., 1981; Larson, 1986). Half of the items for each dimension are focused on positive feedback and the other half are focused on negative feedback, yielding eight subscale scores. The original measure assessed each dimension for both positive and negative feedback from five different sources (supervisor, co-workers, subordinates, other relevant individuals, and the self). The

source component of the current measure is focused on the supervisor, but can be adapted to measure perceptions of several feedback sources.

While the FAQ measures several important characteristics of the feedback delivery process, it largely neglects several characteristics of performance measurement, feedback content, and system commitment. Additionally, Larson et al., (1986) found little evidence that the FAQ factors are distinct and commented that, "they appear to covary so strongly as to be empirically in discriminable." However, the findings did suggest that it may be more useful to use two composite scores; one for positive feedback items and one for negative feedback items. Like the FAQ, the current measure includes timeliness and frequency as characteristics of feedback delivery; however, sensitivity is considered a characteristic of feedback source (i.e., support) and specificity is operationalized within the feedback content factor (i.e., illustrative). While the current measure does not include separate composites for positive and negative feedback items, the current measure includes items to measure perceptions of the evaluative properties of both the measurement and feedback content components.

Feedback Environment Scale (FES)

The FES focuses on source credibility and feedback quality and delivery. It was developed as a diagnostic tool for use in training managers in the areas of feedback and coaching (Steelman et al., 2004; Norris-Watts & Levy, 2004). For example, if employees in a particular department indicate that feedback is not delivered in a supportive manner, coaching could be provided to the supervisor who delivers feedback to that department. Unlike the current measure, the FES neglects to elicit perceptions regarding the measurement system used to derive feedback.

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Additionally, it is largely focused on evaluating the source of the feedback (i.e., supervisor or coworker) and does not attempt to separate the source from the feedback content. Sample items include, "My supervisor is tactful when giving me performance feedback," and "I seldom receive praise from my supervisor." The current audit also includes items regarding the source (e.g., "During feedback meetings, the source of my feedback stresses problem solving rather than criticism."); however, it differs in that it does not assume that the supervisor is the source and items are written in an attempt to separate the source from feedback content and processes. Sample items include, "Feedback is presented in a way that encourages goal setting or action planning" and "Feedback is based on my job related behaviors." Notice, there is no mention of the source in either item. Considering that source may be confounded with the message (Ilgen et al., 1979), it may be useful to at least attempt to examine them independently.

Performance Feedback Characteristic Questionnaire (PFCQ)

The PFCQ examines the relationship between what the authors believed to be the five major characteristics of a feedback interview; supportive behavior practiced by the manager, inviting subordinates to participate, participation in goal setting, proportion of time spoken and criticism (Nemeroff & Wexley, 1979). The supportive appraisal behavior and invitation to participate dimensions are multi-item dimensions, but single items are used to measure proportion of time spoken (actual participation), criticism, and participation in goal setting. The items are to be completed by subordinates and managers from their own perspective. For example, subordinates respond to questions such as, "The manger tries to be friendly during the interview." The manager version of the question is, "I try to be friendly during the interview."

While this instrument measures perceptions of several dimensions of feedback, it neglects the measurement and system commitment components of feedback intervention and several facets of feedback content. Also, like the FES, the measure does not attempt to separate the feedback content and delivery from source characteristics. Finally, the manner in which actual participation is measured does not capture any evaluation of the proportion of time spoken. Meaning, some participants may feel speaking 25% of the time is adequate, others may feel it is less than adequate. The perception of adequacy is more likely to influence cognitive and affective reactions to the feedback session.

Employee Performance Appraisal Participation, Goal Setting, Feedback Scale (PGF)

The PFG is based on the premise that employee participation, goal setting and feedback are the foundations of valid and accepted performance appraisal systems (Roberts, 1992; Roberts & Reed, 1996). Three scales comprise the PFG; participation, feedback, and goal setting. The participation dimension assesses the quality of communication between the feedback source and the recipient, and participation in setting goals. The lines between intervention components are blurred by this measure. For instance, the feedback dimension contains questions regarding source, content, and delivery. The current measure also considers participation in performance standard development and feedback sessions, including goal setting; however, items of the FIPS are rooted within their respective system components. Additionally, the current measure attempts to separate source characteristics from feedback facets.

Tangential Feedback Measures

There are also several feedback related measures that are tangentially related to those highlighted previously. For example, the Job Feedback Survey (Herold & Parsons, 1985) assesses the amount and type (positive or negative) of feedback information available by source (organizational/supervisory, co-workers, task/self). The measure includes fifteen identifiable dimensions or source and type combinations. Positive supervisory behavior (e.g., "My supervisor assigning me to special jobs") is an example of positive feedback from the organization/supervisor. Others have developed measures of feedback seeking behavior (e.g., Ashford & Cummings, 1983), sensitivity to feedback (e.g., Edwards & Pledger, 1990), and feedback orientation (e.g., Liden & Mitchell, 1985). These measures may be useful for understanding individual differences in relation to recipient reactions to feedback. Lastly, the Fedor et al. (1990) measure assesses perceptions of supervisor intentions during the feedback process. While perceptions of source intentions can also influence recipient reactions to feedback, supervisor intention is only a small component feedback intervention.

The Current Measure

The Feedback Intervention Perceptions Scale (FIPS) is concerned with measuring facet-level employee perceptions of several characteristics (see Table 1) that are used to describe the major feedback intervention components discussed previously; (a) performance measurement, (b) feedback content, (c) feedback delivery, (d) system commitment, and (e) feedback source. The development of the FIPS provides a response to the practicality concerns raised with

reference to performance management research (e.g., Banks & Murphy, 1985; Bretz et al., 1992; Keeping & Levy, 2000) but should also prove useful to theory building and testing.

The FIPS is intended to be useful for gauging employee perceptions of their feedback interventions. Measurement at the facet level will allow practitioners to pinpoint potential problem areas. While an overall mean score and mean scores for each subscale can be calculated, practitioners may also want to attend to responses on individual items. Characteristics of the feedback intervention that are perceived unfavorably can be addressed and amended. Such information could also be broken down by unit or supervisor in order to deliver targeted remedies. In essence, the tool can provide feedback to management about the effectiveness of their feedback intervention, those who provide feedback, and the organizational support given to the intervention and the end users.

Researchers can also benefit from a sound facet-level measure of feedback intervention components. Perceptions of the diverse system characteristics have been found to influence several feedback reactions and critical organizational outcomes. However, the relationships are complex and rarely examined in a comprehensive manner. This measure will allow researchers to better study the complex relationships between facet level perceptions, global feedback reactions, and critical organizational outcomes. Additionally, researchers could utilize the instrument to measure baseline perceptions of current feedback interventions when exploring the impact of manipulating system characteristics. The examination of several intervention characteristics and reactions at the same time is critical toward understanding the mechanisms by which feedback is effective.

The following section describes the scale development and validation process. Stage one of the process involved item generation. Two primary methods were used to identify the characteristics of effectiveness of feedback; an extensive literature review and a survey of subject matter experts (SME). Several items were written based on the literature and SME reports to measure perceived characteristics of the following five intervention components;(a) performance measurement, (b) feedback content, (c) feedback delivery, (d) system commitment, and (e) feedback source. Subject matter experts then independently sorted a list of randomly ordered items into the intervention components and reviewed each item for clarity. Stage two involved scale development. Item and scale statistics were reviewed to guide item reduction and construct refinement. Additionally, confirmatory factor analysis was used to assess the fit of the proposed measurement model and competing models. In an effort to cross validate, the models were tested on a second sample in stage three. To further examine validity of the FIPS, relationships with feedback reaction and organizational outcome variables were examined.

CHAPTER FOUR: SCALE DEVELOPMENT

Item Generation

A deductive approach was used to generate the initial item pool for the Feedback Intervention Perceptions Scale. Based on a thorough literature review, several characteristics were identified as having an impact on the effectiveness of feedback intervention. These characteristics were sorted by the intervention component they represented and narrowed down to the fourteen constructs defined in Table 1. Several extant measures of feedback and performance review characteristics were reviewed and items were selected that best reflected construct definitions. Items were also adapted from the Motivational Feedback System Audit (Pritchard, 1997). The MFSA was written in statement form as a checklist for feedback system development and review of extant systems. The MFSA statements and items from existing measures were revised to better measure the underlying constructs of the FIPS or otherwise improve the clarity of the item. For example, the MFSA guideline, "Unit personnel should know what level of output is expected on each measure" was changed to, "I know what is expected of me on each performance measure." Finally, five industrial-organizational psychology graduate students were asked to independently list the qualities that they feel are important to effective feedback intervention. Additional items were generated based on their responses. Sample items are listed in Appendix A.

The purpose of the measure is to elicit employee perceptions about several properties of their feedback intervention, as opposed to global reactions to feedback or the feedback intervention (e.g., accuracy, fairness, utility, satisfaction). As such, items refer to specific

characteristics of performance measurement (e.g., relevance), feedback content (e.g., specificity), feedback delivery (e.g., frequency), and contextual factors (e.g., source credibility, management commitment) that influence them. Several items were adapted or written per characteristic to measure perceptions across each intervention component. The initial item pool contained over 300 items. All items were written to be rated on a simple 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores were meant to represent a greater perceived presence of a characteristic. Additionally, in an effort to avoid systematic error (Jackson, Wall, Martin & David, 1993) and improve response validity (Schriesheim & Hill, 1981) no items required reverse scoring.

The initial item pool contained several items per intervention component and was reviewed for content and clarity by a panel of subject matter experts (SMEs). For the purposes of this study, the SMEs were five industrial-organizational psychology graduate students who are familiar with organizational feedback interventions. The intent of the review was to ensure the instructions and items were easy to read and understand. Participants were asked to identify items that were not clearly written and asked report their interpretation the items. Based on the review, six items were revised. Items were also examined for readability using the Flesch-Kincaid Grade Level test which revealed that the instrument was written at a ninth grade level.

A second goal in the item generation stage was to demonstrate content validity of the items. The panel of five SMEs reviewed the items and determined whether or not the items appropriately sampled the domain of interest. This process required SME's to independently sort the set of randomly ordered items into the dimensions they best represented (Anderson &

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Gerbing, 1991). Subject matter experts first indicated which feedback intervention component (i.e., performance measurement, feedback content, feedback delivery, system commitment, and feedback source) was being assessed by each item and then indicated the referent characteristic (e.g., perceived system knowledge, evaluative, available). Schriesheim and Hinkin (1990) posited that students are useful at this stage of the process, as sorting requires intellectual ability rather than work experience. Bordens and Abbot (1996) suggested that SME agreement around seventy percent is acceptable. However, an agreement level of eighty percent or greater is commonly cited in the literature and was used as a guideline for this study. Items were refined, removed, or replaced based on this process. Consequently, the pool was reduced to 192 items.

Method

The 192 item measure was administered to participants who were employed at least part time (20 hours per week) and had received performance feedback within the last year. It was required that participants reported having had at least one formal performance feedback meeting with their current employer. Participants were students recruited from a large southeastern university and workers from Amazon's Mechanical Turk (MTurk; www.MTurk.com). Students received course credit for their participation. MTurk is a website that allows "requestors" (those requesting work) to solicit "workers" to complete a variety of tasks. Using MTurk's Requestor User Interface (RUI), a Human Intelligence Task (HIT) was created. The HIT for this study was a survey. The survey title, compensation rate ($1.50), and time allotted were listed on the MTurk website amongst HITs from other requestors. Those who clicked on the title of this survey were directed to the Explanation of Research. Workers were notified that they would receive a survey

code upon completion of the survey and directed to enter this code into MTurk in order to be compensated monetarily. Interested and eligible participants, based on the inclusion criteria, clicked on the survey link and were directed to Qualtrics to complete the survey. Compensation was processed anonymously through Amazon's website. MTurk has been used since at least 2009 by social scientists to recruit research participants (Landers & Behrend, 2015).

A total of 319 working adults completed some portion of the survey items. The data were screened based on a number of factors including response frequency, completion time, and insufficient effort responding (i.e., inattentiveness, response invariance). Participant responses were removed from the final data set if they responded to the survey more than once (as identified by anonymous MTurk Worker ID), completed the survey in less than 1/3 the average survey completion time (7 minutes), or incorrectly responded to instructed attention filters (e.g., Please select "Strongly Agree for this item."). One hundred and seventeen participants were removed from the sample based on these criteria. As a means of further quality control, the mean amount of variance across the hypothesized FIPS component scales was calculated for each participant. Cases with mean variance of less than .20 were screened out. A total of 20 participants were identified and removed from analyses on the basis of response invariance. The final sample consisted of 182 participants; 103 (56.59%) from MTurk and 79 (43.41%) students.

Participants were between the ages of 18 and 66 years old (M =30.96, SD =11.027). There was a relatively equal distribution of participation by gender; 53.3% of participants identified as female, and 46.7% identified as male. Participants were predominately White, non-Hispanic (45.8%); however, other represented ethnicities included; Asian (34.1%), Hispanic or

Latino (8.8%), Black or African American (8.2%), American Indian or Alaska Native (1.6%), and Native Hawaiian or Other Pacific Islander (.5%).

Of the thirty-two industry options provided (see demographic questions in Appendix C), twenty-six were selected by at least one participant suggesting the industries represented by this sample were diverse. The most commonly reported industries included: Education (13.2%); Computer – Hardware/Software/Internet (9.9%); Retail/Wholesale Trade (8.8%); Service Industry – Food/Dining (8.8%); Accounting/Finance/Banking/Insurance (7.7%); Healthcare/Medical (6.6%). Most participants reported being in professional positions with no supervisory responsibilities (38.5%), followed by clerical/administrative positions (25.8%), manager/supervisor positions (22.5%), production/maintenance positions (12.1%), department director positions (.5%) and executive positions (.5%). Additionally, most participants had been employed by their current company between 4 and 42 months (52.7%, $M = 43.91$, $SD = 45.01$).

<div align="center">Analyses</div>

<div align="center">*Examination of Item and Scale Properties*</div>

Items with low inter-item correlations, extreme means, and/or low variance were considered for elimination as were items with high skew. In cases where the skew was greater than $|1|$, kurtosis was also examined. Both criteria were used because measures of skewness are less meaningful when using short-interval ordinal scales. However, the current instrument is intended to be a diagnostic tool for applied purposes; thus, all feedback intervention characteristics that can be independently manipulated may be useful to practitioners and were considered for inclusion in the final measure. As such, several items did not meet the skew and

kurtosis criteria but were retained. Where items were redundant and item statistics were approximately equivalent, the item with higher readability level was excluded. As a result of these analyses, eighty items were retained for the final scale.

When developing a comprehensive multidimensional measure, key issues include parsimony while maximizing internal consistency. As such, Cronbach's coefficient alpha was used to obtain an estimate of internal consistency for each of the five theorized scales and fourteen subscales. Initial scale statistics including reliability coefficients and intercorrelations are presented in Table 2. Internal consistency estimates ranged from .84 to .92 for the five intervention component factors (i.e., Performance Measurement, Feedback Content, Feedback Delivery, Organizational Support, and Feedback Source), and from .76 to .92 for the fourteen component characteristics factors. The internal consistency for the entire scale was .97. These preliminary results suggest substantial inter-item overlap and the results meet traditional standards for internal consistency (Nunnally & Bernstein, 1994).

Table 2: Descriptive Scale Statistics and Intercorrelations

Scale	No. of Items	Mean	(SD)	1	2	3	4	5
1. Performance Measurement	16	5.64	(.73)	(.84)				
2. Feedback Content	28	5.50	(.87)	.77**	(.90)			
3. Feedback Delivery	11	5.32	(1.08)	.59**	.76**	(.92)		
4. System Commitment	11	5.00	(1.22)	.50**	.66**	.65**	(.90)	
5. Feedback Source	14	5.47	(.92)	.71**	.81**	.71**	.68**	(.89)

Note. $N = 182$. Correlations are among scales created from averaging items. Standardized latent factor correlations are found in Figure 8. Cronbach alpha coefficients reported on diagonal. **$p < .001$.

Factor Structure

To assess the construct validity of the FIPS, five unique models were submitted to confirmatory factor analysis (CFA). Confirmatory factor analytic techniques were more appropriate for this study than exploratory factor analysis for at least two reasons. First, specifying models a priori minimize the potential for capitalizing on chance (Fabrigar, Wegener, MacCallum, & Strahan, 1999). Second, CFA allows the direct testing of competing models. Thus, conclusions can be based on the absolute fit of one model and on the relative fit of alternative models.

Higher-Order Model (Model 1)

The proposed Higher-Oder Model is hierarchical, such that a higher-order "Feedback Intervention Perceptions" factor was defined by second-order feedback intervention components (i.e., Performance Management, Feedback Content, Feedback Delivery, System Commitment, and Feedback Source). The second-order factors are defined by component characteristics (e.g., Valid Measures, Strategic, Participative). This model was based on empirical evidence that feedback system characteristics are highly related but can predict unique increments of variance in feedback reactions and organizational outcomes. Considering this evidence and the subject matter experts' categorization of items into the five feedback intervention components and then into one of the fourteen characteristics defining those components, this model was expected to best fit the data. It was hypothesized that the second-level factors accounted for the correlations between the first-order factors. As such, items were expected to load directly onto their respective first-order factors (e.g., seven items loading onto Perceived System Knowledge, nine

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items loading onto Valid Performance Measures) and the first-level factors were expected to load onto the second-order factors (e.g., System Knowledge and Valid Measures would load onto Performance Measurement). The Higher-Order Model is displayed in Figure 2.
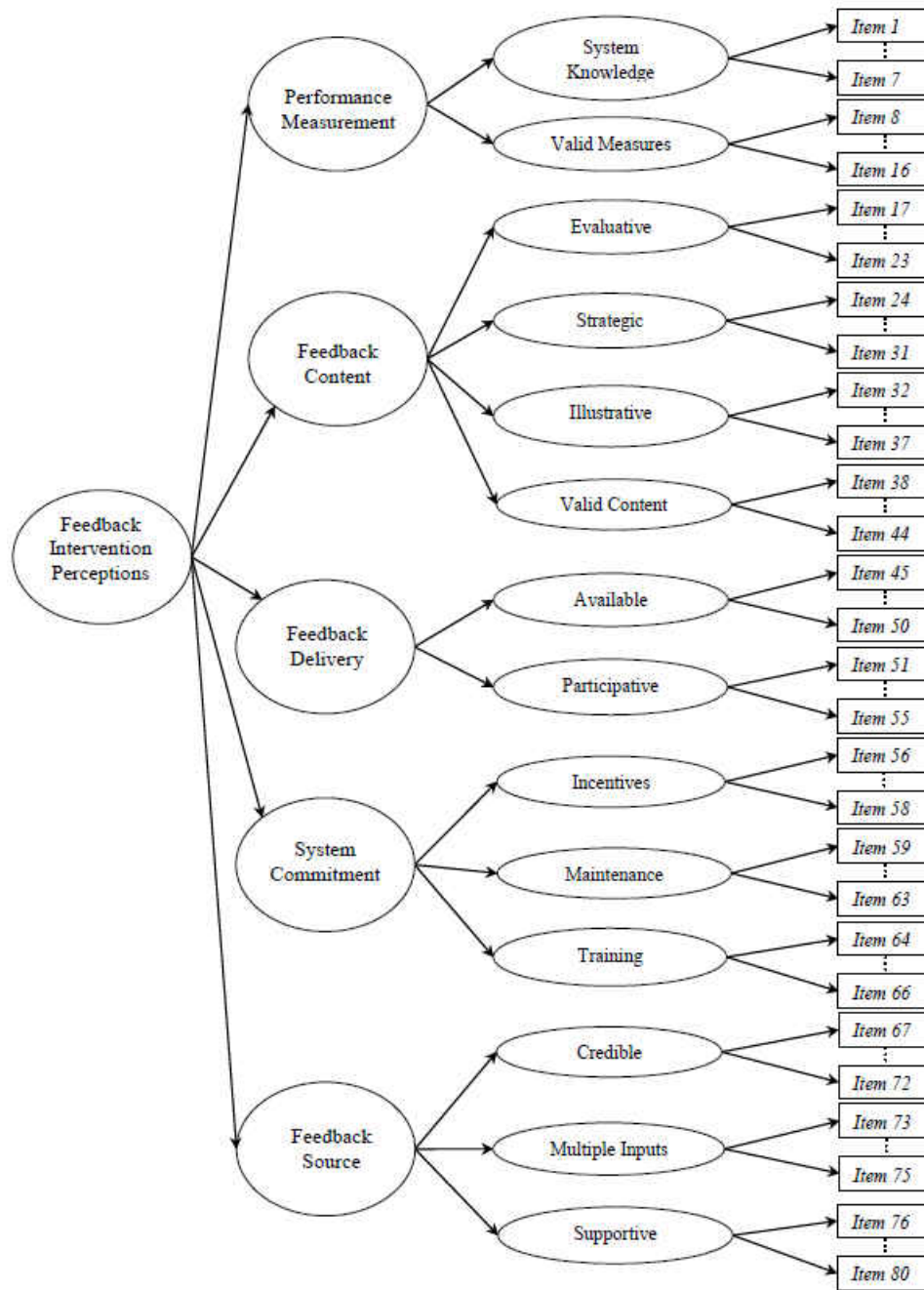
Figure 2: The Proposed Higher-Order Model (Model 1)

Five-Factor Model (Model 2)

Like Model 1, the Five-Factor Model was hierarchical and the five intervention component factors (second-order factors from Model 1) defined an overall "Feedback Intervention Perceptions" factor; however, Model 2 did not include the fourteen system characteristic factors (first-order factors from Model 1). All of the items were instead expected to load directly onto the five intervention component factors. The Five-Factor Model is displayed in Figure 3.
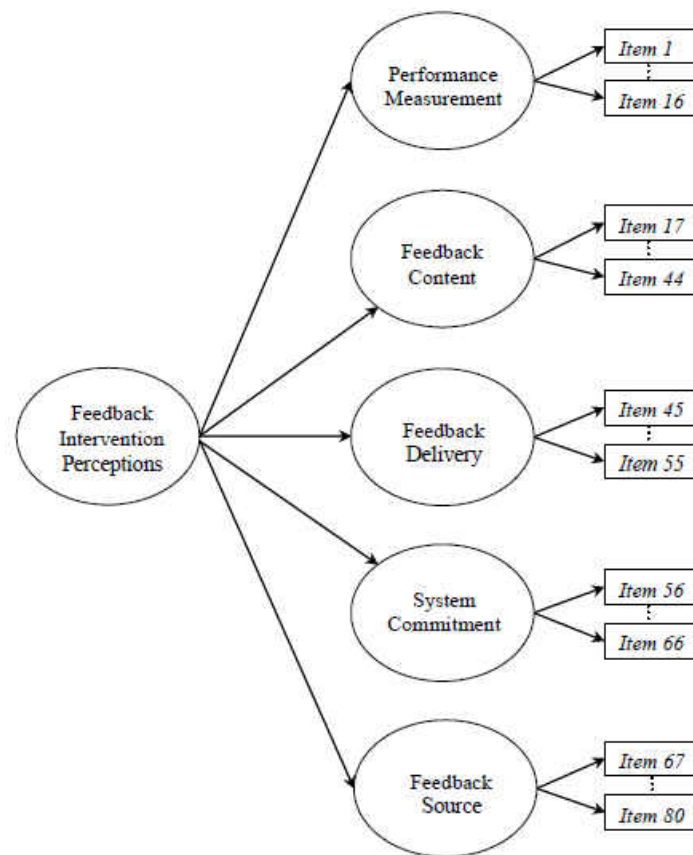
Figure 3: Five-Factor Model (Model 2)

<u>Oblique Five-Factor Model (Model 3)</u>

The Oblique Five-Factor Model is similar to Model 2 except the latent factors were permitted to correlate freely. Fit for this model might suggest the scale measures five correlated factors of feedback intervention perceptions, rather than a single higher-order "Feedback Intervention Perceptions" factor defined by five latent factors. Model 3 is displayed in Figure 4.
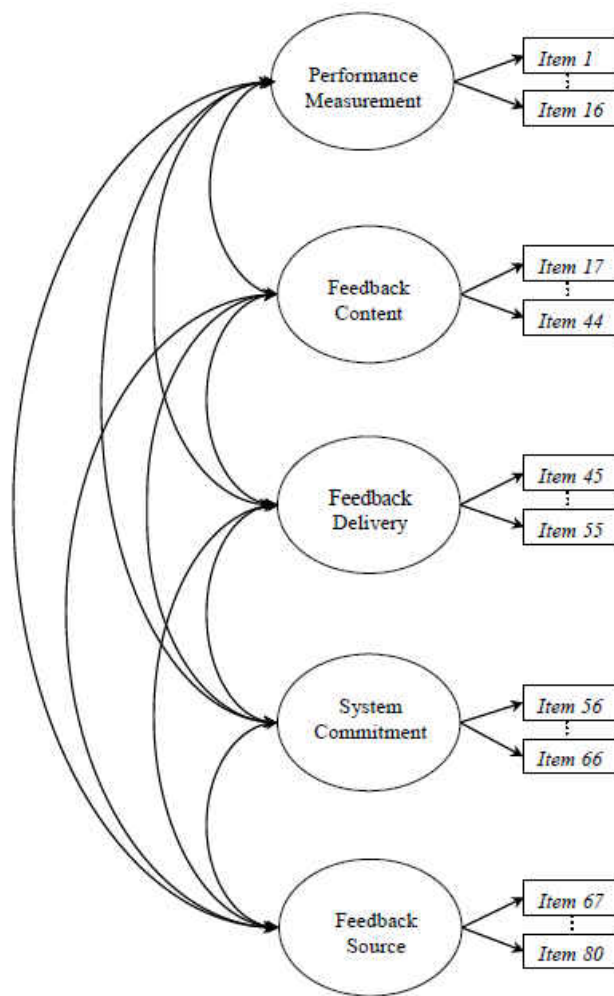
Figure 4: Oblique Five-Factor Model (Model 3)

<u>Fourteen-Factor Model (Model 4)</u>

The Fourteen-Factor Model was hierarchical such that the characteristics factors (first-order factors from Model 1) defined an overall "Feedback Intervention Perceptions" factor; however, Model 4 did not include the five system component factors (second-order factors from Model 1). All of the items were instead expected to load directly onto the fourteen characteristics factors. The Fourteen-Factor Model is displayed in Figure 5.
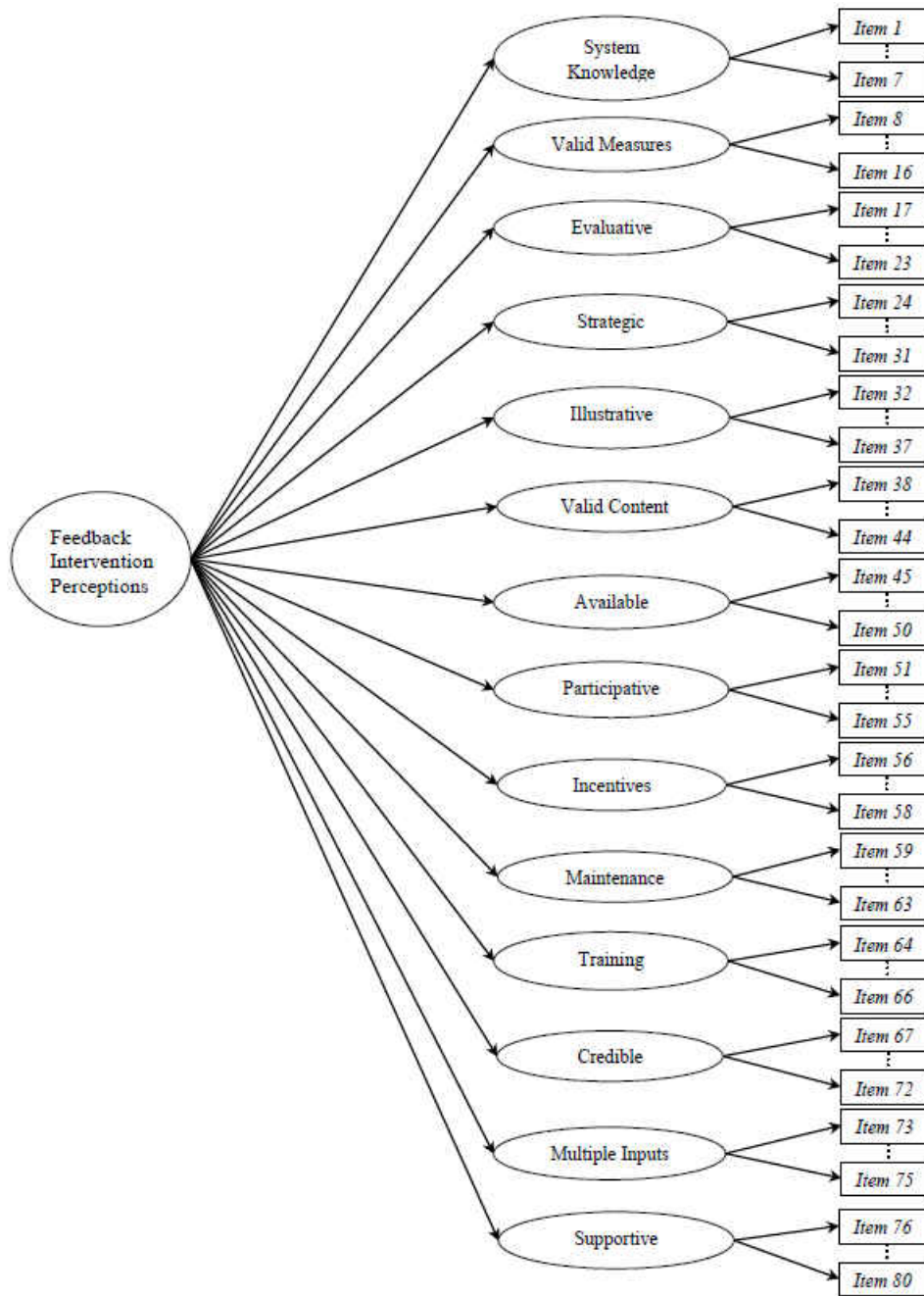
Figure 5: Fourteen-Factor Model (Model 4)

<u>Single-Factor Model (Model 5)</u>

While it is plausible to identify and discuss a broad range of feedback intervention characteristics, it is less clear as to whether each of the properties is distinct. In fact, previous studies investigating the dimension structure of performance feedback have concluded that the perceptions of feedback intervention characteristics covary so strongly that there is little evidence that distinct dimensions exist and that it may make more sense to focus on the overall quality of the intervention (e.g., Larson et al., 1986; Kinicki et al., 2004). Thus, a one-factor model was tested as a competing model. If feedback intervention perceptions are in fact a unitary construct, every path between the indicators and general factor should be significant and reasonably large. Comparing the fit of this model to the proposed model provides a test of discriminant validity. Should the this model fit the data better than the Higher-Order Model, the FIPS is not measuring distinct latent feedback intervention characteristics factors as intended but instead, a unitary construct. The Single-Factor Model is displayed in Figure 6.
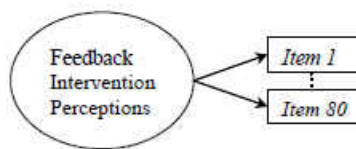
Figure 6: Single-Factor Model (Model 5)

Fit Indices

Five different fit indicators were used to interpret absolute fit for each model; (a) the chi-square index (χ^2), (b) root mean square error of approximation (RMSEA), (c) the non-normed fit index (NNFI), (d) the comparative fit index (CFI), and (e) standardized root mean square residual (SRMR). These fit indices are commonly reported in the applied literature and perform favorably in Monte Carlo research (Brown, 2006). Considering the χ^2 was expected to be significant due to its sample size sensitivity, the other indicators were relied upon more heavily. Regarding NNFI and CFI, a value of .90 generally indicates acceptable fit as higher values indicate better fit (Bentler, 1990). Conversely, lower values indicate better fit with RMSEA and SRMR. A value close to .05 (or less) on RMSEA indicates good fit and values between .05 and .08 indicate adequate fit (Brown & Cudeck, 1993); likewise a value of .08 (or less) generally indicates good fit with SRMR.

Competing models were compared by testing the change in χ^2 across models; however, in large samples chi-square difference tests can incorrectly indicate that small differences in model fit are significant (Joreskog & Sorbom, 1996). As such, other indicators were relied upon more heavily (i.e., change in CFI and overlap of the 90% RMSEA confidence intervals). Generally, a CFI difference greater than .01 and non-overlapping confidence intervals would indicate one model fit the data significantly better than the competing model (Cheung & Rensvold, 2002).

Confirmatory Factor Analysis

Confirmatory factor analysis was used to evaluate the fit of the proposed Higher-Order

Model and the three competing models (i.e., the Five-Factor Model, the Oblique Five-Factor

Model, and the Single-Factor Model). All models were fit using LISREL 8.8 with maximum

likelihood estimation (Jöreskog & Sörbom, 2006). The proposed Higher-Order Model (Model 1)

did not converge, suggesting poor model fit. In contrast, each of the four competing models fit the

data well. Fit indices for the four remaining models are presented in Table 3.

Table 3: Fit Results for Structural Models of FIPS

Model	χ^2	df	RMSEA	RMSEA 90% CI	NNFI	CFI	SRMR	$\Delta\chi^2$	ΔCFI
1. Higher-Order	–	-	-	-	-	-	-	-	
2. Five-Factor	6058.60	3075	.073	(.071-.076)	.934	.936	.081	-	
3. Oblique Five-Factor	6017.44	3070	.073	(.070-.076)	.934	.936	.080	41.16**	.000
4. Fourteen-Factor	5368.29	3066	.064	(.062-.067)	.945	.947	.083	690.31**	.011
5. Single-Factor	8216.37	3380	.096	(.094-.099)	.917	.920	.084	2157.77**	.016*

Note. $N = 182$. All chi-square analyses were done in comparison to the Five-Factor Model. *df* = degrees of freedom; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; RMSEA 90% CI = root-mean-square error of approximation 90% confidence interval upper and lower bounds; NNFI = non-normed fit index; CFI = comparative fit index; SRMR = standardized root mean residual. ** = $\Delta\chi^2$ $p < .001$. * = ΔCFI > .01

Five-Factor Model (Model 2)

The Five-Factor Model was the first competing model. In this model, the first-order factors

(i.e., Perceived System Knowledge, Valid Measures, Evaluative, Strategic, Illustrative, Valid

Feedback, Available, Participative, Incentives, Maintenance, Training, Credible, Multiple Inputs, and

Supportive) were removed from the model. The indicators of these factors instead loaded directly

onto their respective second-order latent factors (i.e., Performance Measurement, Feedback Content, Feedback Delivery, System Commitment, and Feedback Source). Results indicated the model fit the data well (RMSEA = .073, NNFI = .934, CFI = .936, SRMR = .081). Factor loading estimates, with few exceptions, were strong (from .25 to .81) and all loadings were significant (*t*-values > |2|) suggesting that the items were good indicators of their purported factors. Further, none of the standardized loadings were above 1.00 and inspection of the modification indices indicated no localized points of poor fit in the solution. Completely standardized parameter estimates for the latent factors are displayed in Figure 6.
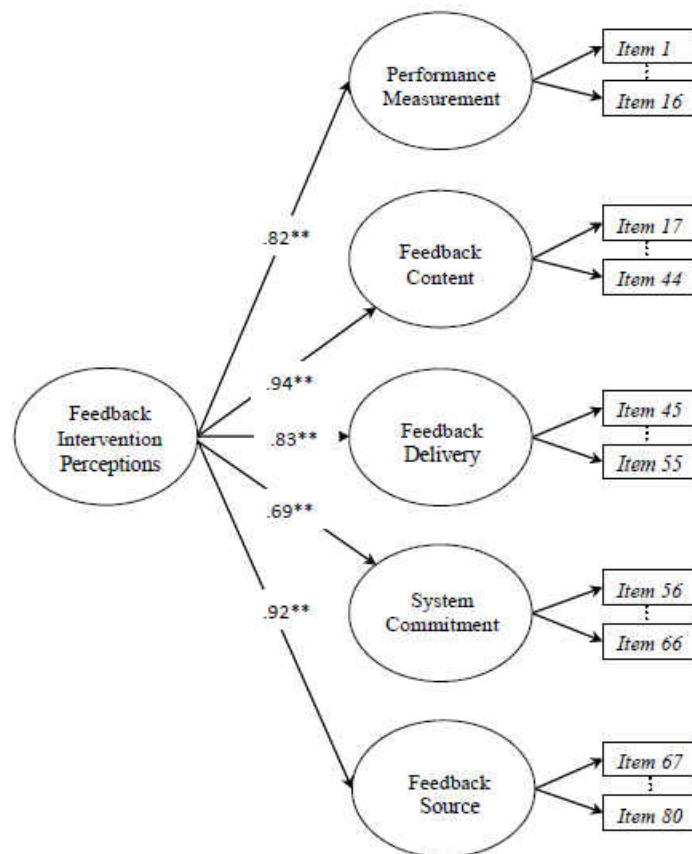
Figure 7: Standardized Solution for the Five-Factor Model (Model 2)
$\chi2 = 6058.60$, *df* = 3075. CFI = .936, RMSEA = .073. ** = *p* < .001.

Oblique Five-Factor Model (Model 3)

The results of this model also reflect adequate fit (RMSEA = .073, NNFI = .934, CFI = .936, SRMR = .080). Based on the $\Delta\chi^2$ statistic, there was a significant difference between the models ($p < .001$); however, the equivalent CFI indices and overlapping RMSEA confidence intervals indicate neither model fits the data significantly better than the other. Factor loading estimates, with few exceptions, were strong (from .25 to .80) and all loadings were significant (t-values > |2|) suggesting that the items were good indicators of their purported factors.

The latent correlations among the five dimensions of the FIPS were significant and ranged from .47 to .85. While some of these correlations are high, they are all at or below the .85 guideline for assessing discriminant validity (Kenny, 2012). Results and theory support the inclusion of the five dimensions as separate, but highly related factors that define a unitary "Feedback Intervention Perceptions" factor. The model with the standardized loadings is presented in Figure 8.
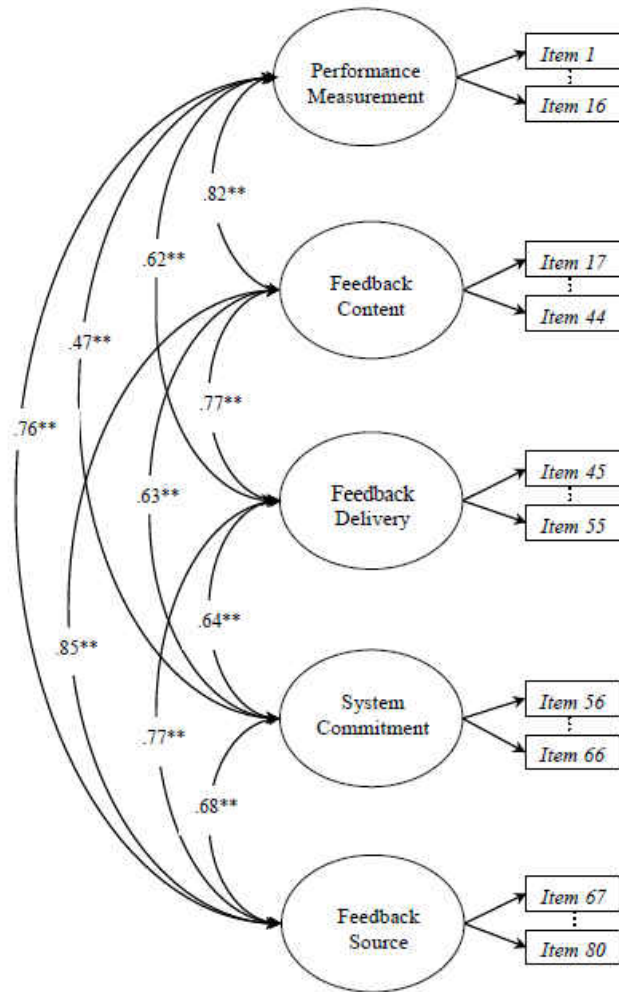
Figure 8: Standardized Solution for the Oblique Five-Factor Model (Model 3)
$\chi2 = 6017.44$, $df = 3070$. CFI = .936, RMSEA = .073. ** = $p < .001$.

Fourteen-Factor Model (Model 4)

The Fourteen-Factor Model also fit the data well (RMSEA = .064, NNFI = .95, CFI = .95, SRMR = .083). When compared to the Five-Factor model, the fourteen-factor model fit the data better ($\Delta\chi^2 = 690.31$, $p < .001$; RMSEA 90% $CI_{\text{five-factor model}}$ = .070-.075, RMSEA 90% $CI_{\text{fourteen-factor model}}$ = .062-.067, ΔCFI = .01). Factor loading estimates, with few exceptions, were

strong (from .28 to .91) and all loadings were significant (t-values > |2|) suggesting that the items were good indicators of their purported factors. The model with the standardized loadings is presented in Figure 9.
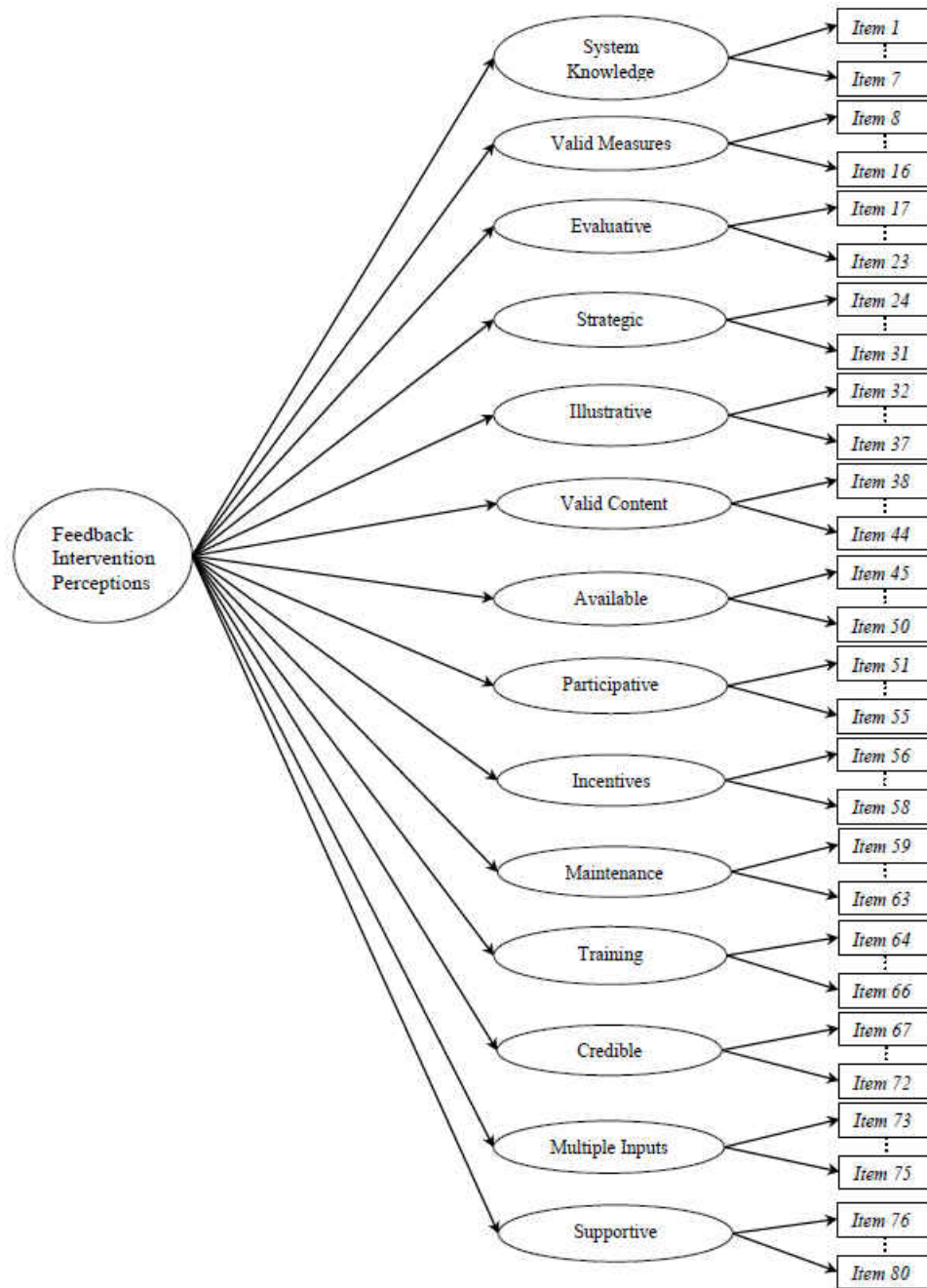
Figure 9: Standardized Solution for the Fourteen-Factor Model (Model 4)
$\chi2 = 6017.44$, $df = 3070$. CFI = .936, RMSEA = .073. ** = $p < .001$.

<u>Single-Factor Model (Model 5)</u>

This model was used to examine the discriminant validity of the latent factors. In this model, all of the items loaded onto one higher-order latent factor labeled "Feedback Intervention Perceptions." All of the items loadings were significant (t-values > $|2|$) and ranged from .19 to .70. While the model exhibited adequate fit (RMSEA = .096, NNFI = .92, CFI = .92, SRMR = .084), when compared to the Five-Factor model, the Single-Factor model fit the data significantly worse ($\Delta\chi^2$ =2157.77, p < .001; RMSEA 90% $CI_{\text{five-factor model}}$ = .071-.076, RMSEA 90% $CI_{\text{single-factor model}}$ = .094-.099, ΔCFI = .016). This suggests evidence for the discriminant validity of the latent factors.

<u>Respecification</u>

While each of the Model 2 factor loadings were significant and the modification indices did not suggest model respecification, there were three items from the Performance Measurement scale and three items from the Feedback Content scale with questionable loadings (below .40). Upon examination of the items, it was concluded to keep the three items from the Performance Management scale as they appeared to measure aspects of the domain that could be useful to practice and were not covered by other items. However, the weaker loading items on the Feedback Content scale were attributed to a high potential for misinterpretation due to item wording. The items, "Factors beyond my control are considered during feedback meetings," "Feedback takes into consideration factors beyond my control that influence my performance," and "Feedback takes social and situational constraints to my performance into account" were intended to measure feedback on performance that is under one's control. This concept was

measured by at least one other item on the scale with a factor loading at .50. As such, the three items were removed from the model.

Regarding Model 4, modification indices for the Incentive, Training, and Maintenance factors were high suggesting they might be measuring the same latent factor. The indicators for these factors loaded strongly on the System Commitment factor in the Five-Factor Model. Considering this evidence along with the inter-item correlations and high internal consistency coefficients of the three item Training ($\alpha = .86$) and Incentive ($\alpha = .87$) scales, it made empirical and theoretical sense to drop redundant items from the training and incentive scales and collapse the three System Commitment facets (including Maintenance) into a unitary factor. As a result, one item was dropped from the Incentives factor ("There are incentives for supervisors to participate in the performance management process.") and two items were dropped from the Training factor ("Meetings and/or training sessions are used to introduce the performance measurement system" and "Training is provided for the performance management system.").

The analyses described above resulted in a seventy-four item measure. Further, the Five-Factor Model was favored over the fourteen-factor solution as the minimal improvement in fit was not preferred over parsimony. A new Five-Factor Model was tested with the reduced measure and the data fit the new model only slightly better than the original (i.e., RMSEA = .074, NNFI = .939, CFI = .941, and SRMR = .080). Based on the $\Delta\chi^2$ statistic, there was a significant difference between the models ($p < .001$); however, neither model fit the data significantly better than the other when considering the ΔCFI (.005) and overlapping RMSEA confidence intervals (RMSEA 90% $CI_{\text{five-factor model}}$ = .071-.076, RMSEA 90% $CI_{\text{respecified five-factor}}$

$_{model}$ = .071-.077). As not to capitalize on chance, the factor structure of the modified instrument

was tested on a second sample.

CHAPTER FIVE: VALIDATION

To further investigate the factor structure of the Feedback Intervention Perceptions Scale, data were collected from a second sample to cross validate the factor structure findings from the sample one data analyses. A second goal of the validation effort was to find evidence of convergent and discriminant validity as well as criterion-related validity evidence. As such several additional measures were administered and their relationships with the Feedback Intervention Perceptions Scale were tested.

Method

Participation was restricted to adults who worked full-time (40 or more hours per week) and had received performance feedback within the last six months. Participants also had to report having at least one formal performance feedback session with their current employer. Participants were recruited using Qualtrics Online Sample services and Amazon's MTurk.

A total of 687 working adults completed some portion of the survey items. The data were screened based the participation restrictions listed above and a number of factors including response frequency, completion time, and insufficient effort responding (e.g., inattentiveness, response invariance). Participant responses were removed from the final data set if they did not meet the inclusion requirements, responded to the survey more than once (as indicated by anonymous MTurk worker ID number), completed the survey in less than 1/3 the average survey completion time (7 minutes), or incorrectly responded to instructed attention filters. Three hundred and eighty two participants were removed from the sample based on these criteria. As a means of further quality control, the mean amount of variance was calculated for each participant

across scales. Cases with mean variance less than .20 were screened out. A total of eleven participants were identified and removed from analyses on the basis of response invariance. The final sample consisted of 294 participants; 142 (51.6%) from MTurk and 153 (48.4%) from Qualtrics Panel. Participants were between 20 and 77 years old ($M =37.83$, $SD =10.89$). There was a relatively equal distribution of participation by gender; 53.6% of participants identified as male, and 46.4% identified as female. Participants were predominately White, non-Hispanic (66.4%); however, other ethnicities represented include Asian (16.6%), Black or African American (8.5%), Hispanic or Latino (6.8%), and American Indian or Alaska Native (1.7%).

Of the thirty-two industry options provided (see demographic questions in Appendix C), thirty were selected by at least one participant suggesting the industries represented by this sample are diverse. The most commonly reported industries in this sample include: Education (13.6%); Healthcare/Medical (9.5%); Accounting/Finance/Banking/Insurance (9.2%); Retail/Wholesale Trade (8.1%); Computer – Hardware/Software/Internet (7.5%); and Manufacturing (7.5%). Most participants reported being in professional positions with no supervisory responsibilities (37.6%), followed by clerical/administrative positions (18.6%), manager/supervisor positions (25.4%), production/maintenance positions (11.5%), and department director positions (3.4%) and executive positions (3.4%). Most participants had worked for their current employer between 12 and 65 months (53.4%, $M = 84.79$, $SD = 138.70$) and in their current positions between 6 and 39 months (51.8%, $M = 61.98$, $SD = 121.99$).

Most participants indicated the primary purpose of their formal performance feedback programs was Motivation/Development (pointing out strengths and weaknesses and discussing

how to capitalize on or correct them; 47.6%). Employment decision making (input for administering rewards or punishment) was the second most popular purpose (25.5%). Nearly all participants indicated that their immediate supervisor was their primary feedback source (94.9%). Participants chiefly received formal feedback via a combination of verbal and written mediums (51%) on a quarterly (or longer) basis (69.4%). A majority of participants received individual based performance feedback (70.1%) as opposed to group based or a combination of the two.

Construct Validity

Based on the results of study one, tests of reliability and confirmatory factor analyses (CFA) were conducted to confirm the internal consistency and fit of the Five-Factor Model (Model 2). Competing models, the Oblique Five-Factor (Model 3), the Single-Factor (Model 4), and the Higher-Order (Model 1), were also tested.

Convergent and Discriminant Validity

The Feedback Intervention Perceptions Scale was expected to display strong, positive correlations with measures of cognitive feedback reactions (e.g., accuracy, fairness, utility). Additionally, FIPS was expected to have a strong, positive relationship with the affective feedback reactions, Positive Affectivity toward Feedback and Feedback Intervention Satisfaction. It was expected that there would be a strong, negative relationship between Negative Affectivity toward Feedback and the FIPS. For purposes of evaluating discriminant validity, two measures of job satisfaction were administered. While the FIPS was expected to

display a strong, positive relationship with job satisfaction, the relationship was expected to be of a lower magnitude than its relationship with the feedback reaction measures.

Measures

Cognitive reactions

The cognitive reaction constructs - accuracy, fairness, and achievability were measured using scales adapted from the Kendharnath et al. (2010) multi-dimensional measure of feedback acceptance.

Accuracy. Accuracy reactions were measured with four items adapted from Kendharnath et al., (2010; α =.96). The original measure was developed to measure reactions toward feedback regarding a specific writing task. Items were slightly modified to better suit the purposes of this study. For instance, the item, "The feedback I received about my writing is accurate" was changed to, "The feedback I receive about my job performance is accurate." Respondents indicated their level of agreement on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Fairness. Fairness reactions were measured with four items adapted from Kendharnath et al. (2010; α = .94). Again, items were modified to better suit the purposes of this study. The items were; "The feedback I receive fairly represents my job performance," "The feedback I receive is based on fair performance criteria," "The procedures used to deliver feedback regarding my performance are fair," and "The procedures used to evaluate my performance are fair." Respondents indicated their level of agreement on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

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Achievablity. Achievability reactions were measured using an adapted version of the three item subscale developed by Kendharnath et al. (2010; α = .90). The items were; "My job performance feedback leads me to believe that I can improve," "Considering the job performance feedback I receive, I believe I can successfully improve my work related behaviors," and "I believe I can successfully improve on the behaviors suggested by the job performance feedback I receive." Respondents indicated their level of agreement on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Utility. Utility reactions were assessed using six items adapted from Jawahar (2010; α = .95). The items were; "I learn a lot from the job performance feedback I receive," "The feedback I receive helps me recognize my job performance strengths and weaknesses," "The feedback I receive helps me develop a clearer idea of what is expected of me," "The feedback I receive helps me more clearly understand my exact job duties and responsibilities," "The feedback I receive helps me learn how I can do a better job," and "Feedback about my job performance is very valuable to me." Respondents indicated their level of agreement on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Affective reactions

Satisfaction with feedback intervention. The operationalization of satisfaction with feedback intervention is inconsistent and is often measured with only one item or is contaminated with other constructs (e.g., accuracy, utility, fairness). As such, a measure of satisfaction with feedback intervention was developed for this study (α = .95). Considering the FIPS is intended to measure all components of feedback intervention, the satisfaction measure

was written to evaluate satisfaction with feedback content and system processes. Sample items included; "I am satisfied with the way my performance is measured," "I am satisfied with the feedback I receive," and "My organization has an excellent system for delivering feedback." Respondents indicated their level of agreement on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Affect Toward Feedback. Positive and negative affect was measured using scales based on those developed by Zuwerink and Devine (1996) and modified by Keeping and Levy (2000). Positive affect was measured using six adjectives associated with positivity (i.e., happy, optimistic, good, confident, proud, and pleased with myself); and negative affect was measured with six adjectives associated with negativity (i.e., agitated, angry, annoyed, bothered, disgusted, and irritated). Respondents indicated how well each adjective described their typical feelings following performance feedback from 1 (does not apply) to 7 (applies very much). Both scales displayed strong internal consistency, Cronbach's alpha coefficients were .95 and .94, respectively.

Job Satisfaction. Job satisfaction was measured using two commonly used scales. The first measure was Brayfield and Rothe's (1951) job satisfaction scale as modified by Judge and colleagues (e.g., Judge, Bono, & Locke, 2000; $\alpha = .87$). The items are; "I feel fairly satisfied with my present job," "Most days I am enthusiastic about my work," "Each day of work seems like it will never end," "I find real enjoyment in my work," and "I consider my job rather unpleasant." The second scale was the three item Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1979; $\alpha = .96$). "All in all, I am satisfied with my job,"

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"In general, I like working here," and "Generally speaking, I am very satisfied with this job."

Respondents indicated their level of agreement on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Criterion Related Validity

An empirical study was conducted to test the utility of using the Feedback Intervention Perceptions Scale as a predictor of motivation and intent to use feedback. Performance appraisal and review procedures have implications for the distribution of outcomes (e.g., reward allocation, promotion, wage increases). Further, feedback alone may be considered an outcome, especially when it is linked to the probability of future reward (Ilgen et al., 1979). As such, perceptions of procedural and distributive organizational justice are prominent in the performance management literature. Considering the wealth of previously discussed empirical research linking perceptions of organizational justice to feedback intervention and critical organizational criteria (e.g., Roberson & Stewart, 2006; Folger et al., 1992; Elicker, 2000), justice was expected to mediate the relationship between the FIPS and motivation. The outcome, motivation, was operationalized two different ways in this study. As such, the mediation model presented in Figure 10 was tested twice with different outcome variables; motivation and intent to use feedback.
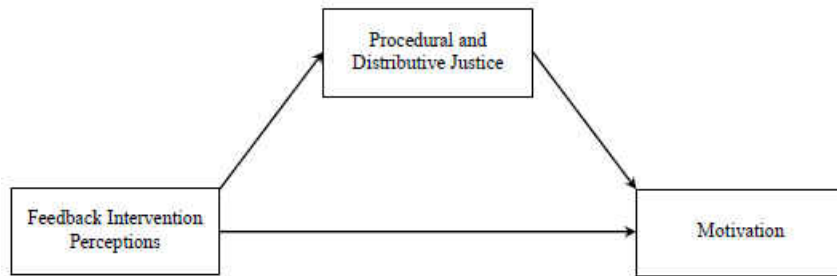
Figure 10: Proposed Justice Model

Measures

This section discusses mediator and outcome measures used to test the organizational

justice model presented in Figure 10, and concludes with a description of the control variables.

Procedural and Distributive Justice. Organizational justice was measured using the

seven-item Procedural Justice scale (α = .91) and the four-item Distributive Justice scale (α =

.94) developed Colquitt (2001). Internal consistency for the combined scales was .95. As

prescribed by the scale author, the parenthetical parts of the measure's items are to be tailored by

context. As such, all items were tailored to a feedback intervention context. All items required

respondents to report extent on a five-point scale from 1 (to a small extent) to 5 (to a large

extent).

While completing the procedural justice items, participants were instructed to consider

the performance measurement procedures used to arrive at feedback. The procedural justice

items asked participants to rate "To what extent." Sample items included; "Have you been able

to express your views and feelings during those procedures?" and "Have those procedures been

free of bias?"

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The distributive justice items asked participants to consider the feedback they received and to rate "To what extent." Sample items included; "Does your feedback reflect the effort you have put into your work?" and "Is your feedback justified, given your performance?"

Motivation. Motivation was measured with the Effort and Direction scales from the Motivation Assessment System (MAS). As prescribed by the scale author, items were standardized and summed to form a composite measure of motivation (α = .85). The measure operationalizes the Pritchard-Ashwood model of motivation (an overview of the model was previously outlined in this manuscript). The development and validation of the MAS is described in an unpublished white paper (Pritchard, 2010).

The Effort scale (α = .88) assessed the amount of energy exerted toward one's job. The effort item, "I consistently put forth the maximum effort possible at work" was rated on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). Respondents rated the amount of effort they put into their job on a five-point scale from 1 (very low) to 5 (very high). Finally, respondents estimated how much of their total, maximum possible effort they put into their job on a six-point percentage scale. Each item was standardized before summing them to compute a scale score.

The eight-item Direction scale (α = .80) measured how effectively effort is applied toward actions that benefit the organization. Items included, "I divide my time across tasks in the way that is most helpful to the organization" and "Trying to find better ways of doing my job is a waste of time." Five-point agreement and frequency response scales were used across the direction scale.

Intent to use feedback. The six item Kendharnath et al. (2010; α = .93) "Intent to use" subscale was adapted to measure employee's motivation to use feedback. Again, items were modified to better suit the needs of this study. For example, "I have identified at least one skill I want to develop" was changed to "I use the performance feedback I receive to identify skills that I want to develop." Respondents indicated their level of agreement on a seven-point Likert scale from 1 (strongly disagree) to 7 (strongly agree).

Control Variables

While the research findings are mixed, demographic variables such as age and tenure may impact feedback intervention perceptions. As such, several demographic variables (e.g., age, gender, race, industry, organizational tenure, position, tenure in current position) were captured and used as control variables. Further, favorability of last feedback has been found to impact reactions toward intervention (Russell & Goode, 1988) and was also included as a control variable. Finally, objective reviews (e.g., Alvero et al., 2001; Balcazar et al., 1985) have found moderate to large effects of criteria such as feedback frequency, feedback participants, feedback medium, and length of time since last feedback meeting (estimate in days). As such, the aforementioned variables were also included for control purposes.

Favorability of last feedback. Participants were asked, "Please recall the last time you received formal feedback regarding your performance. How favorable was it?" Participants rated favorability from 1 (Extremely Unfavorable) to 7 (Extremely Favorable). Previous research has found that subordinates are able to accurately report their most recent performance ratings (Russell & Goode, 1988).

Feedback Frequency. Frequency refers to how often formal performance information is communicated to recipients. In their objective review of feedback characteristics, Alvero et al. (2001) identified eight intervals. Four of the intervals were use; (a) daily (one or more times in a period of 24 hours), (b) weekly (any frequency less than once per day and at least once per week, (c) monthly (any frequency less than once per week and at least once per month, (d) quarterly (any frequency less than once a month and at least once every four months. Participants were asked, "How frequently do you receive formal feedback regarding your performance?"

Feedback Participants. "Participants" refers to the people whose performance is described by the feedback. Respondents were asked to indicate, "Whose performance is described by their formal feedback program?" Response options included; (a) individual, (b) group, and (c) individual and group combined.

Feedback Medium. Medium refers to the means by which feedback information is communicated to recipients. In their objective review of feedback characteristics, Alvero et al. (2001) identified eight media; (a) graphs (display individual and/or group performance, (b) verbal (c) written, (d) verbal feedback and graphs, (e) verbal and written feedback, (f) verbal and written feedback and graphs, (g) written feedback and graphs, and (h) verbal and mechanical (e.g., video, audio) feedback. Participants were asked, "Through which media are performance information typically communicated?"

Analyses

The analyses were conducted in a series of steps. First, Cronbach's coefficient alpha was used to confirm the internal consistency of the scales and subscales. Next, confirmatory factor

analysis was used to confirm the fit of the Five-Factor Model and its superiority to the competing models (i.e., the Oblique Five-Factor Model, the Single-Factor Model, and the Higher-Order Model). Five different fit indicators were used to interpret absolute fit for each model; a) the chi-square index (χ^2), b) root mean square error of approximation (RMSEA), c) the non-normed fit index (NNFI), d) the comparative fit index (CFI), and e) standardized root mean square residual (SRMR).

Competing models were compared by testing the change in χ^2 across models; however, in large samples chi-square difference tests can incorrectly indicate that small differences in model fit are significant (Joreskog & Sorbom, 1996). As such, other indicators were relied upon more heavily (i.e., change in CFI and overlap of the 90% RMSEA confidence intervals). Generally, a CFI difference greater than .01 and non-overlapping confidence intervals would indicate the data fit one model significantly better than the competing model (Cheung & Rensvold, 2002).

After confirming the scale reliabilities and factor structure, bivariate correlations were calculated between the focal construct and each of the cognitive and affective feedback reaction measures and the job satisfaction scales described. To test the criterion related validity of the Feedback Intervention Perceptions Scale, regression analyses were performed to test organizational justice's role as a mediator of the direct effects between the FIPS and motivation (Figure 14) and the FIPS and intent to use feedback (Figure 15).

Results

Reliability, Descriptive Statistics, and Correlations Between Factors

Scale statistics including reliability coefficients and intercorrelations are presented in Table 4. Internal consistency estimates ranged from .90 to .96 for the five intervention component factors (i.e., Performance Measurement, Feedback Content, Feedback Delivery, System Commitment, and Feedback Source), and from .84 to .93 for the twelve characteristics factors (reduced from fourteen when the System Commitment characteristic factors were collapsed in study 1). The internal consistency for the entire scale was .98. These results suggest substantial inter-item overlap and the results meet traditional standards for internal consistency (Nunnally & Bernstein, 1994).

Table 4: Descriptive Scale Statistics and Intercorrelations (Sample 2)

Scale	No. of Items	Mean	(SD)	1	2	3	4	5
1. Performance Measurement	16	5.57	(.95)	(.91)				
2. Feedback Content	25	5.48	(1.06)	.85**	(.96)			
3. Feedback Delivery	11	5.46	(1.07)	.73**	.82**	(.90)		
4. System Commitment	8	4.89	(1.32)	.71**	.76**	.70**	(.91)	
5. Feedback Source	14	5.38	(1.07)	.73**	.82**	.79**	.71**	(.93)

Note. $N = 294$. Correlations are among scales created from averaging items. Standardized latent factor correlations are found in Figure 11. Cronbach alpha coefficients reported on diagonal. **$p < .001$.

Confirmatory Factor Analysis

Confirmatory factor analysis was used to evaluate the fit of the Five-Factor Model (Model 2) as well as four competing models (i.e., the Oblique Five-Factor Model, the Twelve-Factor Model, the Single-Factor Model, and the Higher-Order Model). All models were fit using

LISREL 8.8 with maximum likelihood estimation (Jöreskog & Sörbom, 2006). Fit indices for the

five models are presented in Table 5. The Five-Factor, Oblique Five-Factor, and Twelve-Factor

Models best fit the data. The Single-Factor Model fit was significantly worse than the Five

Factor Model and the Higher-Order Model did not converge.

Table 5: Fit Results for Structural Models of FIPS (Sample 2)

Model	χ^2	df	RMSEA	RMSEA 90% CI	NNFI	CFI	SRMR	$\Delta\chi^2$	ΔCFI
1.Higher Order	–	-	-	-	-	-	-	-	
2.Five-Factor	7349.82	2622	.087	(.085-.090)	.963	.964	.073	-	
3.Oblique Five-Factor	7322.31	2617	.087	(.085-.089)	.963	.964	.072	27.51**	.000
4. Twelve-Factor	6193.73	2615	.068	(.066-.071)	.973	.974	.074	1156.10**	.010
5.Single-Factor	10671.22	2627	.102	(.100-.104)	.955	.956	.068	3321.39**	.008

Note. *N* = 294. All chi-square analyses were done in comparison to the Five-Factor Model. *df* = degrees of freedom; CFI = comparative fit index; RMSEA = root-mean-square error of approximation; RMSEA 90% CI = root-mean-square error of approximation 90% confidence interval upper and lower bounds; NNFI = non-normed fit index; CFI = comparative fit index; SRMR = standardized root mean residual. ** = $\Delta\chi^2$ *p* < .001. * = ΔCFI > .01

Five-Factor Model (Model 2)

The Five-Factor Model is the proposed model. In this model, indicators loaded directly

onto their respective latent factors (i.e., Performance Measurement, Feedback Content, Feedback

Delivery, Organizational System Commitment, and Feedback Source) and the latent factors

loaded onto a higher order general factor, "Feedback Intervention Perceptions." Results indicated

the model fit the data well (RMSEA = .087, NNFI = .963, CFI = .964, SRMR = .073). All factor

loading estimates were strong and significant (*t*-values > |2|) suggesting the items were good

indicators of their purported latent factors and the existence of a higher-order general factor.

None of the standardized loadings were above 1.00 and inspection of the modification indices

indicated no localized points of poor fit in the solution. Completely standardized latent factor

loadings for this model are presented in Figure 11 and the indicator loadings are presented in

Table 6.

Figure 11: Standardized Solution for the Five-Factor Model (Model 2; Sample 2)
$\chi^2 = 7349.82$, $df = 2622$. CFI = .964, RMSEA = .087. ** = $p < .001$.

Table 6: Factor Loadings for the Five-Factor Solution

#	Scale_Item	PM	FC	FD	OS	FS
1	PM_PSK1	.501				
2	PM_PSK2	.803				
3	PM_PSK3	.642				
4	PM_PSK4	.505				
5	PM_PSK5	.725				
6	PM_PSK6	.639				
7	PM_PSK7	.680				
8	PM_Val1	.538				
9	PM_Val2	.415				
10	PM_Val3	.697				
11	PM_Val4	.636				
12	PM_Val5	.463				
13	PM_Val6	.665				
14	PM_Val7	.796				
15	PM_Val8	.673				
16	PM_Val9	.815				
17	FC_Eval1		.716			
18	FC_Eval2		.674			
19	FC_Eval3		.652			
20	FC_Eval4		.700			
21	FC_Eval5		.713			
22	FC_Eval6		.624			
23	FC_Eval7		.724			
24	FC_Strat1		.610			
25	FC_Strat2		.778			
26	FC_Strat3		.693			
27	FC_Strat4		.730			
28	FC_Strat5		.724			
29	FC_Strat6		.763			
30	FC_Strat7		.553			
31	FC_Strat8		.784			
32	FC_Illust1		.566			
33	FC_Illust2		.801			
34	FC_Illust3		.586			
35	FC_Illust4		.655			
36	FC_Illust5		.809			
37	FC_Illust6		.700			
38	FC_Val2		.566			
39	FC_Val5		.586			
40	FC_Val6		.767			
41	FC_Val7		.803			
42	FD_Avail1			.426		
43	FD_Avail2			.534		

#	Scale_Item	PM	FC	FD	OS	FS
44	FD_Avail3			.639		
45	FD_Avail4			.508		
46	FD_Avail5			.485		
47	FD_Avail6			.779		
48	FD_Part1			.755		
49	FD_Part2			.774		
50	FD_Part3			.836		
51	FD_Part4			.809		
52	FD_Part5			.822		
53	SC_Incent1				.668	
54	SC_Incent3				.629	
55	SC_Maint1				.661	
56	SC_Maint2				.623	
57	SC_Maint3				.751	
58	SC_Maint4				.793	
59	SC_Maint5				.804	
60	SC_Train1				.707	
61	FS_Cred1					.770
62	FS_Cred2					.759
63	FS_Cred3					.632
64	FS_Cred4					.732
65	FS_Cred5					.673
66	FS_Cred6					.694
67	FS_Mult1					.528
68	FS_Mult2					.471
69	FS_Mult3					.507
70	FS_Supp1					.718
71	FS_Supp2					.781
72	FS_Supp3					.662
73	FS_Supp4					.704
74	FS_Supp5					.757
	Higher-Order Loadings	.910	.980	.868	.782	.896

Note. PM =Performance Measurement; FC = Feedback Content; FD = Feedback Delivery; SC = System Commitment; FS = Feedback Source. All loadings are significant at $p < .001$.

Oblique Five-Factor Model (Model 3)

The results of this model also reflect adequate fit (RMSEA = .087, NNFI = .963, CFI = .964, SRMR = .073). Based on the $\Delta\chi^2$ statistic, there was a significant difference between Model 2 and Model 3 ($p < .001$); however, the equivalent CFI indices and overlapping RMSEA confidence intervals indicate neither model fits the data significantly better than the other. Factor loading estimates were strong (from .42 to .84) and all loadings were significant (t-values > |2|) suggesting that the items were good indicators of their purported factors. The latent correlations among the five dimensions of the FIPS were significant and range from .67 to .90. While these correlations are strong, only three of ten fell at or above the .85 guideline for assessing discriminant validity (Kenny, 2012). Results and theory support the inclusion of the five dimensions as separate, but highly related factors that define higher-order factor. The model with the standardized correlations is presented in Figure 12.
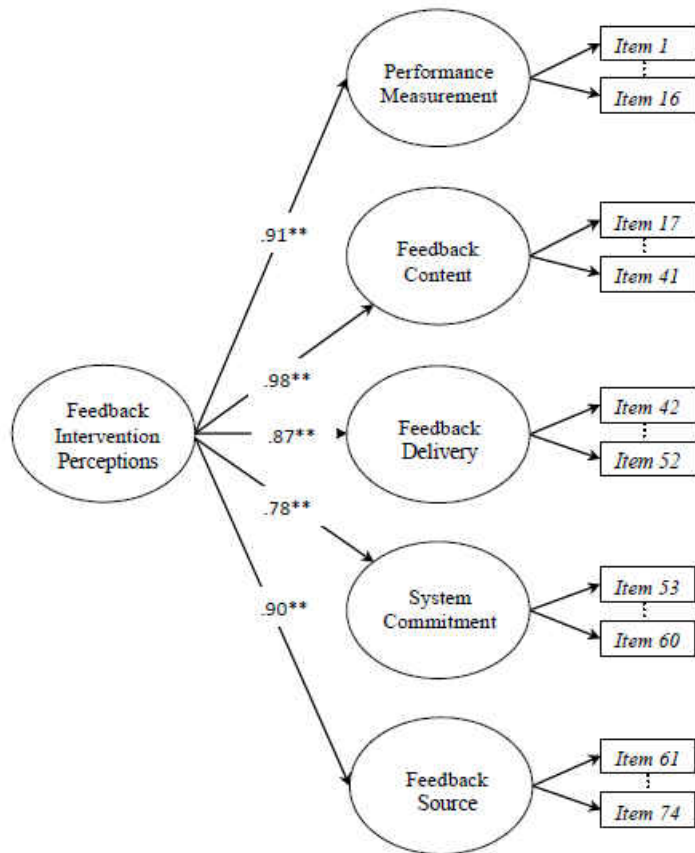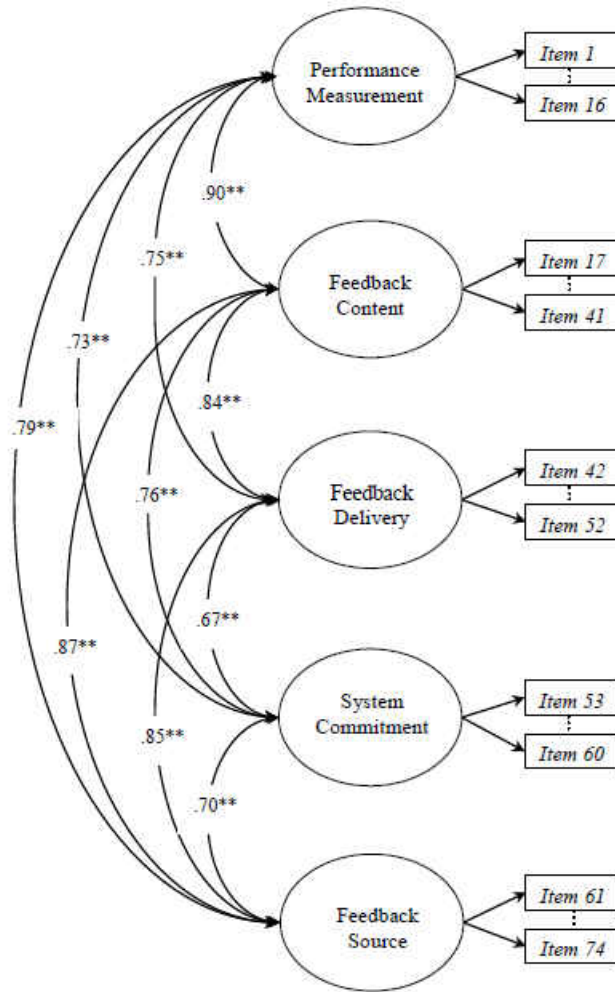
Figure 12: Standardized Solution for the Oblique Five-Factor Model (Model 3; Sample 2) $\chi^2 = 7322.31$, $df = 2617$. CFI = .964, RMSEA = .087. ** = $p < .001$.

Twelve-Factor Model (Model 4)

The Twelve-Factor Model also fit the data well (RMSEA = .068, NNFI = .97, CFI = .97, SRMR = .074). Factor loading estimates were strong (from .43 to .91) and significant (*t*-values > |2|) suggesting that the items were good indicators of their purported factors. All item loadings can be found in Appendix B. When compared to the Five-Factor model, the fourteen-factor

model fit the data better ($\Delta\chi^2 = 1156.10$, $p < .001$; RMSEA 90% $CI_{\text{five-factor model}} = .085\text{-}.089$, RMSEA 90% $CI_{\text{twelve-factor model}} = .066\text{-}.071$, $\Delta CFI = .01$); however, the parsimonious Five-Factor Model was favored over the fourteen-factor solution when considering there was only a minimal improvement in fit The model with the standardized loadings is presented in Figure 13.
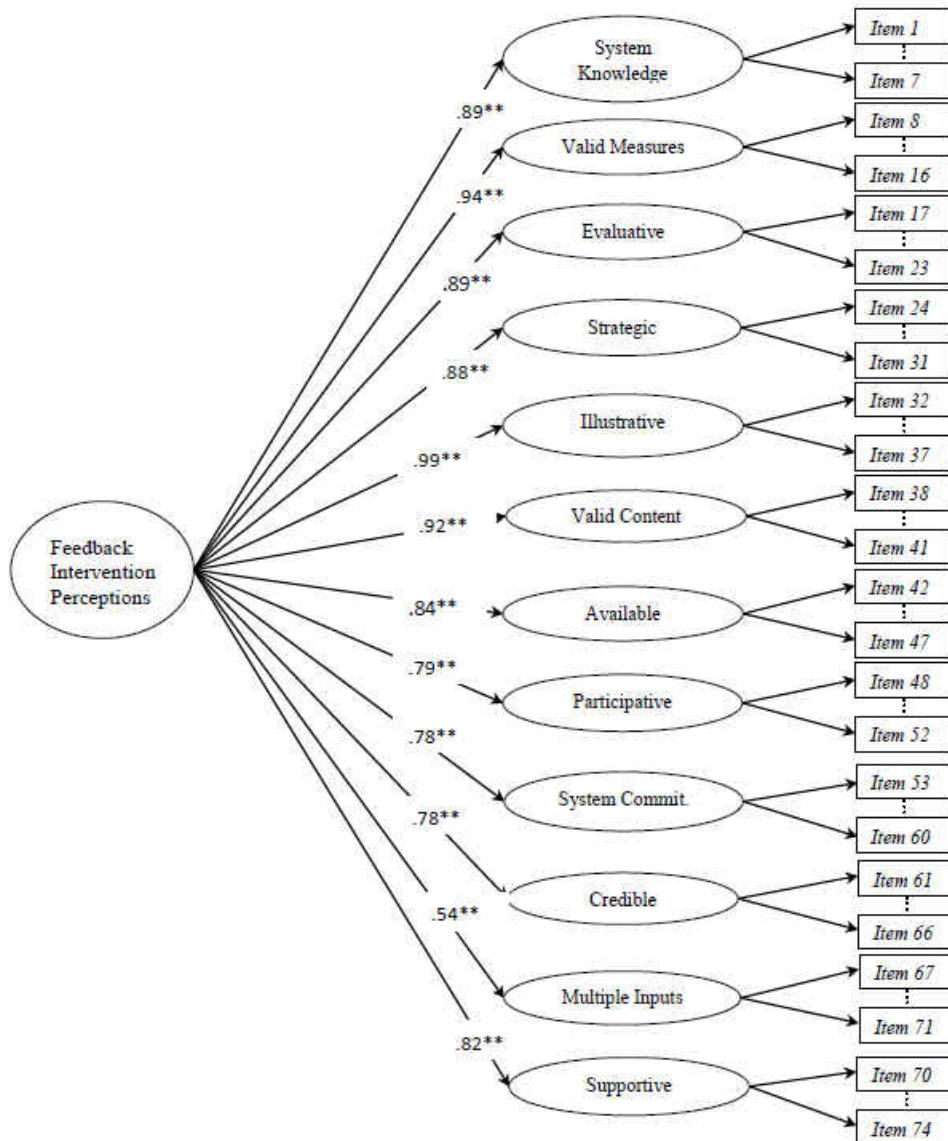
Figure 13: Standardized Solution for the Twelve-Factor Model (Model 4; Sample 2)
$\chi^2 = 6193.73$, $df = 2615$. CFI = .974, RMSEA = .068. ** = $p < .001$.

<u>Single-Factor Model (Model 5)</u>

This model was used to examine the discriminant validity of the latent factors. In this model, all of the items loaded onto one higher order latent factor labeled "Feedback Intervention Perceptions." Factor loading estimates were strong (from .43 to .80) and all loadings were significant (t-values > |2|). While the model exhibited minimally adequate fit (RMSEA = .102, NNFI = .955, CFI = .956, SRMR = .068), when compared to the Five-Factor model, the model exhibited significantly worse fit ($\Delta\chi^2$ =33.21.39, p < .001; RMSEA 90% $CI_{\text{five-factor model}}$ = .085-.089, RMSEA 90% $CI_{\text{single-factor model}}$ = .100-.104, ΔCFI = .008). This suggests evidence for the discriminant validity of the latent factors.

Convergent and Discriminant Validity Evidence

The pattern of relationships between the five intervention component factors was consistent with expectations; observed correlations were stronger between components thought to be more proximal to one another. For example, the strongest correlation was between the Performance Management and the Feedback Content factor (r = .85). A strong relationship was expected as content is derived through measurement. While still strong, correlations between Performance Measurement and the remaining factors were weaker (r = .71 to .73). The correlations between Feedback Content and Feedback Delivery and Feedback Content and Feedback Source were also strong at r = .82. This too was expected as it can be difficult for respondents to separate the content from the delivery and the source from the feedback content and delivery process. System Commitment is a contextual factor conceptually more distal from

the other components. As expected, results indicated System Commitment generally had the weakest correlations with each of the other component factors.

While the components were differentially related to the feedback reaction measures, none of the differences were statistically significant. However, the relationships generally match expected patterns. For example, the strong correlation between Feedback Content and Utility ($r = .80$) would be expected as strategic and illustrative are two of the characteristics of this component. As a composite, the FIPS displayed strong, positive relationships with each of the feedback reaction scales ($r = .65$ to $r = .83$) and a strong, negative relationship with the Negative Affectivity scale ($r = -.60$). Also as expected, correlations between the FIPS and job satisfaction scales were strong and positive ($r = .53$ and $r = .57$); however, Z values (Lee & Preacher, 2013) indicated these correlations were significantly weaker than the relationships with the feedback reaction scales. Specifically, the relationships between FIPS and Accuracy, Fairness, Achievability, Utility, Feedback Intervention Satisfaction, and Negative Affectivity were significantly stronger than the relationships between FIPS and both Job Satisfaction measures at $p < .001$. The correlation between FIPS and Feedback Intervention Satisfaction was significantly stronger than the correlation between the five- item measure of Job Satisfaction ($p < .05$), but not the three-item measure ($p = .06$). The overall pattern of findings is consistent with expectations and provides evidence of convergent and discriminant validity. All of the correlations between the FIPS and feedback reaction and job satisfaction measures were significant at $p < .001$. Descriptive statistics and intercorrelations are displayed in Table 7.

Table 7: Descriptive Statistics and Intercorrelations

Scale (# of items)	Mean(SD)	1	2	3	4	5	6	7	8	9	10
1. FI Perceptions (74)	5.42(.97)	(.98)									
2. Accuracy (4)	5.21(1.25)	.79**	(.95)								
3. Fairness (3)	5.23(1.38)	.80**	.86**	(.94)							
4. Achievability (3)	5.33(1.21)	.74**	.73**	.74**	(.90)						
5. Utility (6)	5.26(1.32)	.82**	.76**	.78**	.83**	(.95)					
6. Satisfaction with FI (5)	5.11(1.49)	.83**	.83**	.86**	.72**	.82**	(.95)				
7. Positive Affectivity (6)	3.63(1.00)	.65**	.69**	.66**	.57**	.64**	.69**	(.95)			
8. Negative Affectivity (6)	1.79(1.00)	-.60**	-.64**	-.65**	-.46**	-.58**	-.65**	-.65**	(.94)		
9 Job Satisfaction 1 (5)	5.26(1.35)	.53**	.50**	.54**	.44**	.56**	.51**	.54**	-.53**	(.88)	
10. Job Satisfaction 2 (3)	5.58(1.42)	.57**	.54**	.59**	.47**	.59**	.61**	.57**	-.49**	.88**	(.96)

Note. (N = 294) The alpha internal-consistency reliability coefficients appear in parentheses along the diagonal.
*p < .05, **p < 0.001.

Criterion Related Validity Evidence

To test the mediation model presented in Figure 8, regression analyses were conducted using the PROCESS Procedure 2.13.1 for SPSS (Hayes, 2013). This procedure provides a direct estimate of the size of the indirect effect of the independent variable on the dependent variable. According to Preacher and Hayes (2004), a significance test associated with the effects between the independent variable and the mediator, and the mediator and the dependent variable should address mediation more directly than a series of separate significance tests not directly involving these relationships. To test the significance of the indirect effect, the Preacher and Hayes Bootstrapping procedure produces bias corrected bootstrap confidence intervals (Hayes, 2013). The demographic items Primary Feedback Source, Feedback Purpose, Feedback Frequency, Feedback Medium, Feedback Participants, Favorability of Last Feedback, Age, Ethnicity, Sex, Industry, Organizational Tenure, Position, Position Tenure, Length of Time Since Last Feedback Delivery, and Data Source were included in each of the models as covariates.

As the standardized regression coefficients in Figure 14 illustrate, the FIPS had significant direct effects on Procedural and Distributive Justice ($b = .63$, 95 % BC CI $=.55-.71$; $t = 15.73$, $p < .001$) and Motivation ($b = .31$, 95% BC CI $=.23-.38$; $t = 7.71$, $p < .001$). Further, the FIPS explained 67% ($F = 34.90$, $p < .001$) of the variance in Procedural and Distributive Justice and 29% ($F = 7.14$, $p < .001$) of the variance in Motivation.

When Motivation was regressed onto Procedural and Distributive Justice and the FIPS, both Organizational Justice ($b = .21$, 95 % BC CI $=.09-.32$, $t = 3.44$, $p < .001$) and the FIPS ($b = .18$, 95 % BC CI $=.07-.28$, $t = 3.35$, $p = .001$) had significant direct effects on Motivation. This

model explained 32% of the variance in Motivation ($F = 7.67$, $p < .001$). The standardized

indirect effect was (.63)(.21) = .13 (95% BC CI = .05 to .21). Considering the confidence

interval does not include zero, the indirect effect was interpreted as statistically significant in the

direction predicted by the mediation hypothesis. While the results of the test of indirect effects

suggest Procedural and Distributive Justice mediates the relationship between feedback

intervention perceptions and motivation, Zhao, Lynch, and Chen (2010) would classify this

relationship as "Complimentary Mediation." Meaning, while there was evidence for mediation,

the significant regression coefficient between the independent and dependent variables with the

mediator present in model would suggest the likelihood of an omitted mediator in the direct path.
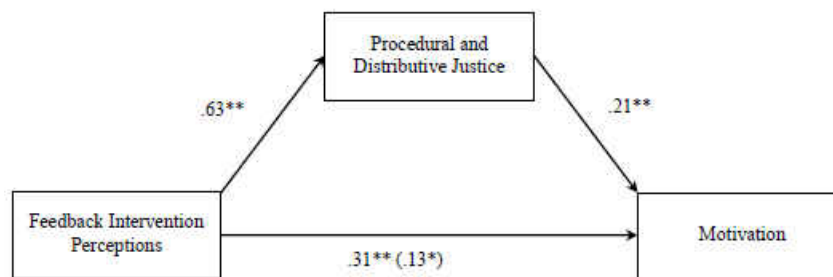
Figure 14: Standardized Regression Coefficients for Justice Model (Motivation).
Note. The standardized indirect effect between FIPS and Motivation is in parentheses. * $p < .05$,
** $p < .001$

To further examine the criterion validity of the FIPS, a second mediation model was

tested. The model was similar to the first, except the outcome variable was changed to Intent to

use feedback. Again, analyses were conducted using the PROCESS Procedure 2.13.1 for SPSS

(Hayes, 2013). The demographic items Primary Feedback Source, Feedback Purpose, Feedback

Frequency, Feedback Medium, Feedback Participants, Favorability of Last Feedback, Age,

Ethnicity, Sex, Industry, Organizational Tenure, Position, Position Tenure, Length of Time Since Last Feedback Delivery, and Data Source were included in each of the models as covariates.

As the standardized regression coefficients in Figure 15 illustrate, the FIPS had a significant direct effect on Procedural and Distributive Justice ($b = .63$, 95 % BC CI $=.55$-$.71$; $t = 15.71$, $p < .001$) and Intent to use feedback ($b = .84$, 95 % BC CI $=.74$-$.95$; $t = 15.66$, $p < .001$). Further, the FIPS explained 67% ($F = 34.90$, $p < .001$) of the variance in Procedural and Distributive Justice and 54% ($F = 20.52$, $p < .001$) of the variance in Intent to use feedback.

When Intent to use feedback was regressed onto Procedural and Distributive Justice and the FIPS, both Procedural and Distributive Justice ($b = .21$, 95 % BC CI $=.05$-$.37$, $t = 2.61$, $p < .05$) and the FIPS ($b = .71$, 95 % BC CI $=.57$-$.85$, $t = 9.71$, $p < .001$) had significant direct effects on Intent to use feedback. This model explained 55% of the variance in Intent to use feedback ($F = 20.12$, $p < .001$). The standardized indirect effect was $(.63)(.21) = .13$ (95% BC CI $= -.01$ to $.26$). As the confidence interval includes zero, the indirect effect was not interpreted as statistically significant. Zhao et al. (2010) would classify this model as a "Direct-only (Non-mediation)" effect and suggest the likelihood of an omitted mediator.
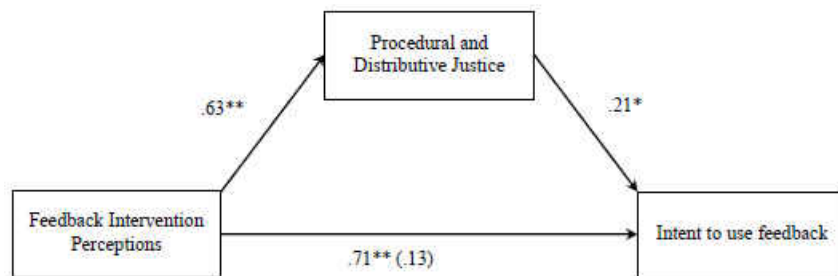
Figure 15: Standardized Regression Coefficients for Justice Model (Intent to use feedback)
Note. The standardized indirect effect between the FIPS and Intent to use feedback is in parentheses. * $= p < .05$, ** $p < .001$

CHAPTER SIX: DISCUSSION

<u>Summary</u>

The current study had two primary purposes; (a) to create a comprehensive multidimensional measure of feedback intervention perceptions, and (b) to find validity evidence to support its utility in both research and practice. The intent of the instrument was to measure several characteristics of five major feedback intervention components (i.e., Performance Measurement, Feedback Content, Feedback Delivery, System Commitment, and Feedback Source). Data were collected from two independent samples and tested to examine the absolute and comparative fit of four alternative measurement models. Results of both studies provide preliminary evidence for the reliability and internal structure of a five-factor measure of feedback intervention perceptions as confirmatory factor analysis indicated the hypothesized five-factor model fit the data well. The FIPS also displayed strong, positive relationships with several feedback reaction measures. These correlations were significantly stronger than those between the FIPS and two measures of a more distal construct, job satisfaction. This pattern of findings is consistent with expectations and theory. The FIPS also accounted for a significant amount of variance in organizational justice, motivation, and intent to use feedback. Finally, regression analyses suggested organizational justice mediated the effect of FIPS on motivation. These findings provide considerable validity evidence for the new measure, the "Feedback Intervention Perceptions Scale."

<u>Implications</u>

The FIPS could have important implications for future theory building and testing. Feedback intervention research has suffered from inconsistent and poor measurement resulting in slow progress toward understanding "when" and "how" feedback interventions best work. Further, there is lack of consistency in the way several central feedback intervention constructs are conceptually and operationally defined. As such, there are many examples of construct contamination across the literature. As noted in the literature review, this problem is perhaps most apparent in the feedback acceptance literature. The newly developed model and measure may allow researchers to take a more sound approach to studying the employee experience with feedback by examining the components and characteristics of feedback intervention. Guided by a systems-based perspective, empirical findings from the performance management and feedback literatures were used to identify the most salient characteristics of each major feedback intervention component. The final model was composed of five components and twelve characteristics. Evidence was found for the utility of calculating a composite for the total FIPS, the five component factors, and the twelve characteristic factors. Scale scores at each level were related meaningfully with measures of feedback reaction, job satisfaction, organizational justice, and motivation.

A composite score was used to test the indirect effect of organizational justice on the relationship between the FIPS and motivation. Roberson and Stewart (1996) found perceptions of source credibility were positively related to perceptions of feedback accuracy, and they interactively influenced motivation through procedural justice perceptions. Consistent with their

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findings, results suggested that the FIPS predicted a significant amount of variance in motivation and the relationship was mediated by organizational justice. Similarly, the FIPS predicted a significant amount of variance in intent to use feedback but the indirect effect of organizational justice was not significant. Considering both tests indicated the likelihood of omitted mediators, future research could benefit from an exploration of potential mediators and moderators of such relationships. There were several unmeasured variables that may influence the relationship between the FIPS and motivation (e.g., organizational climate, trust in management, satisfaction with supervisor). Additionally, this model was tested with a composite FIPS score and a composite organizational justice score. Future research should explore the differential effects of the intervention components on motivation as mediated by procedural or distributive justice.

Many of the issues with the most commonly used instruments may have been corrected with the development of the FIPS. For example, the feedback intervention literature is saturated with idiosyncratic measures developed for specific studies to measure narrow facets of feedback intervention. Moreover, many of the measures displayed poor psychometric qualities and were not subjected to confirmatory factor analytic techniques or rigorous testing. The current measure displayed strong psychometric properties (i.e., strong internal consistency, structural fit). Internal consistency across each of the component and characteristics scales was uniformly high and much higher than reliabilities of many commonly used measures. Additionally, tests of model fit with independent samples generated consistent findings. While this evidence is a good start, further research is needed to refine and establish the FIPS as a standardized measure of feedback

intervention perceptions. A standardized measure would make it easier to communicate and compare findings and build and test theory (Nunnally & Bernstein, 1994).

The FIPS has the potential to allow researchers to take a more holistic approach to studying feedback intervention. Current research is often focused on only one or few systems characteristics at a time (e.g., frequency, sign, timeliness). When multiple characteristics have been explored, some researchers have suggested collapsing characteristics into global feedback reaction measure because little evidence had indicated empirically distinct dimensions (e.g., Larson, 1986). Such conclusions may be attributable to measurement of characteristics across intervention components or the treatment of several narrow facets of the same construct as unique dimensions (e.g., timeliness and frequency). As opposed to measuring empirically indistinct narrow facets, in some cases feedback intervention has been measured too broadly to study the differential effects of unique intervention characteristics. Measurement of global reactions (e.g., accuracy, fairness, satisfaction) neglects the complexity of feedback intervention. A single-factor model was tested to dispute the unitary or global level measurement practices common in the literature. Considering the five-factor solution fit the data significantly better than the single-factor solution, it would appear that empirical evidence supports the examination of distinct dimensions.

The new model may allow researchers to examine feedback interventions at a more intricate level than measures of global reactions or characteristics that blur system component lines. For example, characteristics of the feedback source are often confounded within measures of intervention components (e.g., PGF; Roberts & Reed, 1996). While it may be difficult for

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respondents to differentiate the source from feedback content and feedback delivery, this tool attempts to make the distinction. Source characteristics such as credibility have relationships with several reactions (e.g., accuracy, utility, satisfaction with system; Zuber & Behson, 1998) and can influence responses to negative feedback (e.g., Lueng et al., 2002; Halperin et al., 1976). As such, future research should try to further separate the effects of feedback content and feedback delivery from the effects of feedback source. Isolation of the effects could identify system characteristics that act as a proxy for credible and/or supportive sources or counteract the effects of unfavorably perceived sources.

Future research can also use the FIPS to test the differential relationships between feedback intervention components and a host of other variables (e.g., performance, satisfaction with supervisor, turnover intentions). Results from this study suggest the component factors had differential relationships with each other, and with feedback reaction and outcome measures. Further, these relationships matched expected patterns. For example, the five factors were correlated more strongly with each other than they were with the reaction and outcome measures and components that were more proximal in nature displayed stronger correlations with each other than they did with components that were more distal. For instance, the performance measurement component was more strongly related to feedback content than to any other component. This was expected as feedback content is derived from performance measurement. Similarly, system commitment displayed the lowest correlations with the other system components and reaction measures. This too was expected as system commitment is a contextual factor and while influential, is more distal to the production and delivery of feedback.

Results also indicated the component factors were more strongly related to the feedback reaction measures than they were to the general measures of job satisfaction. There was also some evidence that they are differentially related to reaction measures. For instance, utility was most strongly correlated with the feedback content and feedback source components. This might be expected as the characteristics that define feedback content (e.g., illustrative, strategic, and valid) and feedback source (e.g., credibility) have been found to influence perceptions of usefulness toward improving performance (e.g., Jawahar, 2010; Zuber & Behson, 1998; Keeping & Levy, 2000). Additionally, exploratory regression analyses concluded the components displayed differential effects on organizational justice. Each of the components and theoretically relevant covariates (e.g., age, sex, race, favorability of previous feedback, position, tenure) were included in the regression models. Significant increments of unique variance in procedural justice were accounted for by feedback delivery and feedback source; however, only feedback source predicted a significant increment of unique variance in distributive justice. Considering the influence of utility on outcomes such as loyalty (Reis, 2002) and organizational commitment (Kuvaas, 2011) and the influence of justice on motivation and satisfaction (Elicker, 2000), future research is needed to explore these differential relationships.

While the five-factor model based on the major intervention components fit the data well, preliminary CFA results also indicated adequate fit for a twelve-factor solution based on the component characteristics. Factor loadings for the twelve factor solution are presented in Appendix B. Results of the Five-Factor model were presented earlier for reasons parsimony but in many cases, the twelve-factor solution could prove useful to both research and practice. The

characteristic facets displayed strong internal consistency and correlations between the facets matched expected patterns. For example, correlations between characteristics within the same intervention components were generally stronger than the correlations of characteristics across factors. Additionally, the characteristics were more strongly related to the feedback reaction measures than they were to the general measures of job satisfaction. Further, exploratory regression analyses concluded the characteristics displayed differential effects on organizational justice. All twelve characteristics and theoretically relevant covariates (e.g., age, sex, race, favorability of previous feedback, position, tenure) were included in the regression models. Significant increments of unique variance in procedural justice were accounted for by valid feedback, participative delivery, and source supportiveness; however, participative delivery did not predict a significant increment of unique variance in distributive justice. Rather, valid feedback, source credibility, and source supportiveness did. Findings such as these may add substantial value to the organizational justice and feedback literatures and warrant further investigation.

The findings discussed above may add value to feedback reaction research. Regression analyses indicated the FIPS accounted for substantial amounts of variance (60 to 70%) in accuracy, fairness, achievability, utility, and feedback intervention satisfaction. Reactions such as perceived accuracy influence whether feedback is accepted and acted upon (e.g., Murphy & Cleveland, 1995) and have been found to influence such outcomes as motivation to improve and intent to remain with an organization (Taylor et al., 1995). Considering these findings and the preliminary indications of the differential relationships between components and reactions, it

may be of interest to test the FIPS components and characteristics as potential facet level measures of global reactions. A better understanding of the relationships between component characteristics and reactions such as accuracy may allow researchers to make more specific conclusions and recommendations about the effectiveness of feedback intervention.

The current research focused on perceptions of feedback intervention characteristics; however, a host of recipient characteristics must be also be addressed as they too influence perceptions of feedback intervention and reactions to feedback. Although research findings on the effects of demographic variables such as age and tenure are mixed (e.g., Meyer & Walker, 1961; Snyder, Williams, & Cashman, 1984), personality variables such as conscientiousness and anxiety (e.g., Colquitt et al., 2000), extraversion and agreeableness (e.g., Bell & Arthur, 2008), and neuroticism (e.g., Krasman, 2010; Atwater & Brett, 2005) have been linked to a variety of recipient reactions to feedback (e.g., acceptance, motivation, feedback seeking behaviors).

Likewise, self-evaluative variables can influence reactions to feedback. For example, people are more motivated to use feedback for development when they have high self-efficacy and high internal control (Colquitt, LePine, & Noe, 2000). There is also evidence that self-esteem influences reactions to feedback. Ilgen et al., (1979) posit that recipients tend not to perceive feedback that is inconsistent with self-expectations and empirical literature generally supports for this position. For example, Davis, Carson, Ammeter, and Treadway (2005) found that those with high self-esteem, improved performance more than those with low self-esteem following positive feedback. Additionally, Fedor, Davis, Maslyn, & Mathieson (2001) revealed

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that perceptions of accuracy and credibility of the feedback source influence how high self-esteem individuals respond to negative feedback.

Recent research has begun to explore the role of core self-evaluations (CSE) in the feedback process. Core-self evaluations represent the fundamental basis of four self-appraisal constructs; self-efficacy, locus of control, self-esteem, and neuroticism (Judge, Erez, &Bono, 1998; Erez & Judge, 2001; Bono & Judge, 2003). Each of these constructs display individual influence on feedback reactions which suggests that CSE may be a valuable avenue toward understanding recipient reactions to feedback. For example, higher core self-evaluations were also found to be related to both higher satisfaction (Kamer & Annen, 2010) and goal commitment (Kamer & Annen, 2010; Bono & Colbert, 2005) following performance feedback. Kamer and Annen (2010) found that the opportunity to voice opinion during the appraisal discussion partially mediated the relationships. Future research should explore the interactions between recipient characteristics and perceptions of intervention characteristics.

In addition to implications for theory and research, findings suggest that the FIPS may be useful for practical application. Feedback intervention has broad implications for attitudes and behavior in organizations. Employee views of their feedback intervention influence several reactions and these reactions have been empirically linked to feedback acceptance and several critical organizational outcomes. This study found strong empirical links between the FIPS and organizational justice, motivation and general job satisfaction. These findings suggest feedback intervention may not produce desired effects if there is a lack of employee confidence in the

intervention or components of the intervention. Perhaps worse, poorly viewed systems could be counterproductive.

Practitioners charged with evaluating or fixing broken performance management systems are challenged by the variety of potential changes that can be made (e.g., scale, medium, criteria, incentives, training). Considering feedback is likely the most critical aspect of performance management, the FIPS can be used to evaluate several characteristics of five empirically distinct intervention components. The results can help practitioners more quickly diagnose system issues and enact specific remedies. These remedies can also be evaluated over time with the FIPS. Should future research identify consistent relationships between the FIPS facets and feedback reactions and organizational outcomes, practitioners may also be able to amend systems based on the outcomes they want to effect. For example, a practitioner wanting to increase employee motivation would want to focus energy on the components or characteristics that have the most impact on motivation. Further, this tool could prove useful across different types of feedback interventions (e.g., performance appraisal, ProMES, Management by Objectives, developmental assessment centers, coaching interventions). Further validity evidence is needed for the subscales so that practitioners can confidently make recommendations based on the FIPS results. With the collection of more data, the FIPS can also be standardized and "cut-off" scores can be derived. Cut-off scores may better inform consultants and/or management about failures within a feedback intervention.

Despite the several contributions of this study, it is not without limitations. While the results of this study suggest strong evidence for the construct validity of the FIPS, new measures require refinement based on empirical research. Validation is an iterative process and is never fully completed. The first potential limitation is the study's reliance on self-report survey data from the same source. Common method variance (CMV) is a potential issue with this strategy (Campbell & Fiske, 1959). Consequently, some of the observed covariation between variables may be attributable to the method of measurement, rather than the true relationships between study variables (Podsakoff, Mackenzie, & Podsakoff, 2012). Considering the variables of interest in this study, self-report is defensible and necessary to the assessment of individual perceptions.

Two potential remedies to CMV are to eliminate item ambiguity and to use scales with different properties (e.g., number of scale points, different anchor labels; Podsakoff et al., 2012). Accordingly, all of the FIPS items were independently reviewed by five industrial-organizational psychology graduate students for item clarity prior to administration. Items that were not clear were either removed or revised. Further, eight different response formats were employed in this study. These procedural remedies likely mitigated some of the potential for CMV. While meta-analytic results have concluded CMV may not be as pervasive as once thought (Crampton & Wagner, 1994), exclusive use of self-report does have the potential for effect size inflation due to same source bias. Future research could address this concern by examining external, objective performance metrics or supervisor ratings as outcome variables.

A second limitation is the use of convenience sampling; such an approach can limit generalizability. To try to minimize the effects of sampling bias, data were collected on two samples from three different online sampling services. While findings between sample one and sample two were consistent, the effects were stronger in sample two. Characteristics of sample two may have been more representative of working adults which may lend credibility to these findings. For example, students were not recruited for sample two. As a result, the average age and organizational tenure were higher. A particular strength of this study is that participants rated their actual feedback intervention versus contrived feedback intervention in a laboratory setting where participants may not be invested in the intervention. This approach likely minimized some threat to external validity. Additionally, the samples were diverse with regard to most of the collected demographic variables. Participants were working adults across a variety of organizations and industries, positions, and locations. While a vast majority of respondents lived in the United States and India, there were also respondents from Europe and Africa. Considering the breadth of work environments represented, it is likely that feedback conditions varied to a great extent.

The diversity of the samples likely supports the generalizability of the findings. Nevertheless, data were collected outside of an organizational setting, it is possible that response behavior may be different than if it had been collected within an organizational setting. Future research could examine this possible effect by recruiting a large organization to complete the FIPS. Another way to minimize this threat is to administer the measure to samples that would be

expected to differ along dimensions of feedback intervention perceptions. The samples may be expected to differ based on the type of feedback intervention employed by their organization.

The cross-sectional nature of this data poses limitations to evaluating causality. Because all measures were administered at the same time, one cannot be clear as to the direction of the relationships presented in this study. However, the conclusions regarding predictive, causal relationships may be justified as they were based on theory and previous empirical findings. With regard to the tested organizational justice models, it is more likely that motivations are caused by experience with feedback intervention than it is that experience with feedback intervention is caused by motivation. This effect has been supported by longitudinal empirical study (e.g., Roberson & Stewart, 2006). Further longitudinal research is needed to examine the long-term effects of experience with feedback intervention and explore causal relationships with other critical organizational criteria.

It was also possible that individual difference variables were systematically related to the dependent variables tested in this study. To alleviate such concerns, several covariates (e.g., age, ethnicity, gender, days since last feedback, favorability of last feedback, position, data source) were included in each regression model. The inclusion of the covariates minimizes this threat and increases generalizability of the findings. Future research should explore feedback intervention and the influence of additional recipient characteristics (e.g., self-esteem, core self-evaluation, intrinsic motivation, feedback seeking behavior).

Multicollinearity is often an issue when conducting regression with predictor variables that are expected to be highly correlated with one another. Considering the FIPS component

factors define a higher-order feedback intervention perceptions factor, it was expected that each of the components would be strongly related. To attenuate the relationships as much as possible, efforts were made during item generation to ensure that items conceptually distinguished between components. For example, items for the feedback content and feedback delivery components were written or adapted to isolate the effects of feedback source. Only items within the feedback source scale mentioned the source. However, it is impossible to keep respondents from considering aspects external to the concept an item is intended to tap; especially when the aspects are so proximally related. As such, bivariate correlations between the feedback components were strong ($r = .70$ to $r = .85$). Fortunately, Tolerance indices were all above .70 and these strong relationships did not pose noticeable issues in identifying unique effects of the components.

Considering the proposed Higher-Order Model did not converge, sample size was also a potential limitation to this study. Fit information for CFA depends on model size and characteristics of the variables. Larger models with non-normally distributed variables require larger sample sizes. Kline (2011) suggests that minimum sample size is 200; however, when observed variables are not multivariate normally distributed the necessary sample size is at least 400 (or 5 to 20 times the number of parameters to be estimated, whichever is larger). While the second sample in this study included 294 participants, the Higher-Order Model contained a larger number of parameters and may have demanded a larger sample size. Future research should test the fit of this model and competing models with larger samples.

Bearing in mind the FIPS was created for practical diagnostic purposes as well as research, a final potential limitation is its length. At 74 items practitioners may view it as too time consuming to administer. Researchers may also pause at its length as they are presumably measuring additional variables as part of their study. Fortunately, there is potential for using the component or characteristic facet level scales in cases where the full measure is not desired or necessary. Future research is needed to examine the psychometric properties of the subscales.

Despite the potential concerns raised above, the contributions of this study outweigh the limitations. The scale development and validation procedures followed rigorous and prescribed best practices for measurement development and validation. In the first stage of this study, a systems-based theory and empirical evidence were used to identify and define the characteristics proposed to make up each feedback intervention component. Deductive techniques were then used to generate items to assess each characteristic. A group of subject matter experts independently evaluated each item for clarity and sorted them into the domains they appeared to measure. Each SME had a common set of construct definitions to use as a guide.

In stage two, a reduced and revised set of items was administered to a diverse field sample and several procedures were used to maximize the integrity of the data. Participation was restricted to working adults who receive formal feedback from their employer and cases were screened out if attention filters were missed, surveys were completed in less than 1/3 the average total response time, and displayed high response invariance. Once the data were screened, item statistics (i.e., inter-item correlations, means, standard deviations) and scale statistics (i.e., internal consistency) were calculated and used to evaluate psychometric properties. Several items

were eliminated through this process. The resulting set of items was subjected to confirmatory factor analysis to assess the structural fit of the proposed model to the data. Four models were tested and the best fitting model was subjected to cross validation in a second independent field sample in stage three.

Similar recruiting and screening techniques were employed before data were analyzed. Model fit was confirmed in the second sample and comparisons were made to alternative models. In addition to assessing model fit, relationships between the FIPS and several empirically relevant constructs were tested. While selecting measures of these constructs, a priori considerations were given to CMV. As such, it was important to identify and administer measures with response scales distinct from the FIPS response scales. Further, the effects of several demographic variables (e.g., age, ethnicity, gender, data source) and theoretically relevant feedback characteristics (e.g., days since last feedback, primary feedback source, favorability of last feedback) were measured to be included in regression analyses in an attempt to isolate the effects of systematic relationships between participant characteristics and study variables. The notable method strengths presented above contribute to the external validity of the results and the potential utility of the FIPS in research and practical applications.

<div align="center">Conclusion</div>

The current study produced validity evidence for the Feedback Intervention Perceptions Scale and suggests the measure may be a valuable tool for researchers and practitioners. The ability of the FIPS to predict large amounts of variance in several feedback reactions and valued organizational outcomes may prove useful to theory building and testing. In practice, there are

tremendous benefits of well-conceived and implemented performance management systems. Unfortunately performance management systems have a bad reputation and often fail. Perhaps the common perceptions that performance management systems are not useful may be eliminated if focus is shifted from the rating scale to the quality of feedback processes. This shift could begin by eliciting employee feedback about their feedback.

APPENDIX A: FIPS SAMPLE ITEMS AND ITEM SOURCES

#	Scale	Sample Items	Source
2.	PM_SK2	All the important objectives of my work are clearly communicated.	Pritchard (1997)
3.	PM_SK3	I know what good performance is on each measure.	Pritchard (1997)
5.	PM_SK5	I understand how my performance is measured on this job.	Pritchard (1997)
13.	PM_Val6	Performance standards are applied consistently across members of my work unit.	New
14.	PM_Val7	The performance measures cover all important aspects of my work.	Pritchard (1997)
15.	PM_Val8	Similar measures are used over time to evaluate my performance.	Pritchard (1997)
21.	FC_Eval5	The feedback I receive lets me compare present performance with past performance.	Pritchard (1997)
22.	FC_Eval6	The feedback I receive shows how well I'm performing my job compared to set standards for performance.	Pritchard (1997)
23.	FC_Eval7	The feedback I receive tells me if previous attempts to improve performance worked.	Pritchard (1997)
24.	FC_Strat1	During feedback meetings, actions to remove obstacles that impede my performance are discussed.	New
25.	FC_Strat2	Feedback is presented in a way that encourages goal setting or action planning.	New
26.	FC_Strat3	Feedback meetings include "how-to" information on improving my performance.	New
32.	FC_Illust1	Feedback provides information above what I already know about my performance.	New
35.	FC_Illust4	Specific examples of behavior are provided during feedback meetings.	New
36.	FC_Illust5	The feedback I receive helps me prioritize what to improve.	Pritchard (1997)
38.	FC_Val2	Feedback is based on my job-related behaviors.	Jawahar (2010)
39.	FC_Val5	I am held responsible only for performance that is under my control.	Pritchard (1997)
41.	FC_Val7	The feedback I receive reflects my actual job performance	New
42.	FD_Avail1	Feedback is provided on a regular, predictable schedule.	New
45.	FD_Avail4	Feedback information is available soon after the performance period.	Pritchard (1997)

#	Scale	Sample Items	Source
46.	FD_Avail5	Feedback is usually available when I want performance information.	Pritchard (1997)
49.	FD_Part2	During feedback meetings, I have the opportunity to state 'my side' of the issues.	Jawahar (2010); Giles & Mossholder (1990); Greller (1975)
50.	FD_Part3	Feedback meetings give me an opportunity to express my views about the way my performance is measured.	Gaby (2004)
51.	FD_Part4	I have the opportunity to provide ideas for improvement based on the feedback I receive.	Pritchard (1997)
54.	SC_Incent3	This organization rewards supervisors for delivering quality feedback.	New
56.	SC_Maint2	My supervisor(s) openly support the way employees get information about their performance.	Pritchard (1997)
57.	SC_Maint3	The quality of the information provided through feedback is reviewed regularly (perhaps by top management or a group of peers).	Pritchard (1997)
60.	SC_Train1	I receive training on my role in our performance management process.	Roberts & Reed (1996)
62.	FS_Cred2	[The source of my feedback] has adequate knowledge of my job and its performance standards.	New
63.	FS_Cred3	[The source of my feedback] has observed my performance under both routine and pressured conditions.	Findley et al. (2000)
64.	FS_Cred4	[The source of my feedback] is familiar with all phases/aspects of my work.	Findely et al. (2000); Evans & McShane (1988)
67.	FS_Mult1	Measurement of my performance comes from multiple sources (e.g., the task, co-workers, other managers, customers).	New
69.	FS_Mult3	My feedback is based on information from multiple sources (e.g., the task, co-workers, other managers, customers).	New
72.	FS_Supp3	[The source of my feedback] comes prepared to feedback meetings.	Roberts & Reed (1996)
73.	FS_Supp4	[The source of my feedback] ends feedback meetings on a positive note.	Nemeroff & Wexley (1979)
74.	FS_Supp5	[The source of my feedback] helps me to feel at ease during feedback meetings.	Gaby (2004)

APPENDIX B: FACTOR LOADINGS FOR TWELVE FACTOR SOLUTION

#	System Knowl.	Valid Measures	Evaluat.	Strategic	Illust.	Valid Content	Available	Participat.	System Commit.	Credible	Multiple Inputs	Support.
1.	.512											
2.	.817											
3.	.689											
4.	.542											
5.	.741											
6.	.627											
7.	.706											
8.		.542										
9.		.428										
10.		.690										
11.		.642										
12.		.468										
13.		.681										
14.		.800										
15.		.671										
16.		.816										
17.			.699									
18.			.695									
19.			.728									
20.			.781									
21.			.810									
22.			.632									
23.			.792									
24.				.630								
25.				.778								
26.				.732								
27.				.824								
28.				.823								
29.				.744								
30.				.578								
31.				.852								

#	System Knowl.	Valid Measures	Evaluat.	Strategic	Illust.	Valid Content	Available	Participat.	System Commit.	Credible	Multiple Inputs	Support.
32.					.568							
33.					.820							
34.					.611							
35.					.655							
36.					.787							
37.					.698							
38.						.604						
39.						.659						
40.						.868						
41.						.883						
42.							.585					
43.							.694					
44.							.774					
45.							.647					
46.							.667					
47.							.707					
48.								.771				
49.								.833				
50.								.867				
51.								.845				
52.								.830				
53.									.667			
54.									.628			
55.									.662			
56.									.626			
57.									.749			
58.									.791			
59.									.805			
60.									.708			
61.										.816		
62.										.890		
63.										.646		
64.										.851		

#	System Knowl.	Valid Measures	Evaluat.	Strategic	Illust.	Valid Content	Available	Participat.	System Commit.	Credible	Multiple Inputs	Support.
65.										.568		
66.										.784		
67.											.895	
68.											.885	
69.											.912	
70.												.699
71.												.839
72.												.673
73.												.804
74.												.861
	.891	.940	.886	.880	.994	.923	.837	.793	.781	.781	.542	.820

Note. $N = 294$. All loadings were significant at $p < .001$.

APPENDIX C: VALIDATION STUDY MEASURES

<u>Screening Items</u>

Participants who responded "Part-time" or "No" to the following screening items received the message, "Sorry you are not eligible to participate in this study. We require participants who work fulltime and have received performance feedback through a formal performance measurement and feedback program within the past 6 months."

Please describe you employment status.
1. Full-time (40 or more hours per week)
2. Part-time (less than 40 hours per week)

Do you receive job performance feedback through formal performance measurement and feedback processes?
1. Yes
2. No

Have you received formal job performance feedback within the past 6 months?
1. Yes
2. No

Six items were included as attention filters (e.g., Please select "Strongly Disagree for this question). Cases with an incorrect response to any of the attention filters were removed from data analyses.

<u>Feedback Intervention Perceptions Scale</u>

Items for the Feedback Intervention Perceptions Scale can be found in Appendix A. The following are participant instructions for the Feedback Intervention Perceptions Scale:

Below are several characteristics of performance measurement and feedback processes. Considering your organization's primary, formal performance feedback program, please rate your agreement with each statement from Strongly Disagree (1) to Strongly Agree (7).

<u>Measures used for Validation Purposes</u>

Respondents were instructed, "For the following items, please think about how you generally feel about the feedback you receive regarding your job performance."

Unless otherwise noted, the following scales required participants to indicate their level of agreement on a 7-point Likert scale from 1 (Strongly Disagree) to 7 (Strongly Agree).

Scales for Convergent and Discriminant Validity Study

<u>Cognitive reactions</u>

Accuracy. (Kendharnath et al., 2010)
1. The feedback I receive about my job performance is accurate.
2. The job feedback I receive adequately captures my performance.
3. I agree with the feedback I receive about my job performance.
4. The feedback I receive fits with how I feel I perform on the job.

Fairness. (Kendharnath et al., 2010)
1. The feedback I receive is based on fair performance criteria.
2. The feedback process is fair.
3. The procedures used to evaluate my performance are fair.

Achievablity. (Kendharnath et al., 2010)
1. My job performance feedback leads me to believe that I can improve.
2. Considering the job performance feedback I receive, I believe I can successfully improve my work related behaviors.
3. I believe I can successfully improve on the behaviors suggested by the job performance feedback I receive.

Utility. (Jawahar , 2010)
1. I learn a lot from the job performance feedback I receive.
2. The feedback I receive helps me recognize my job performance strengths and weaknesses.
3. The feedback I receive helps me develop a clearer idea of what is expected of me.
4. The feedback I receive helps me more clearly understand my exact job duties and responsibilities.
5. The feedback I receive helps me learn how I can do a better job.
6. Feedback about my job performance is very valuable to me.

<u>Affective reactions</u>

Satisfaction with feedback intervention. Developed for this study.
1. I am satisfied with the way my performance is measured.
2. My organization has an excellent system for measuring performance.
3. I am satisfied with the feedback I receive.
4. I am satisfied with way the feedback is delivered.
5. My organization has an excellent system for delivering feedback.

Affect Toward the Feedback Intervention. (Zuwerink and Devine, 1996; Keeping & Levy, 2000) Respondents indicated how well each adjective describes their typical feelings following performance feedback from 1 (does not apply) to 7 (applies very much).

1. Positive affect (i.e., happy, optimistic, good, confident, proud, and pleased with myself);
2. Negative affect (i.e., agitated, angry, annoyed, bothered, disgusted, and irritated).

Job Satisfaction 1. (Brayfield and Rothe, 1951; Judge et al., 2000)

1. I feel fairly satisfied with my present job
2. Most days I am enthusiastic about my work.
3. Each day of work seems like it will never end.
4. I find real enjoyment in my work.
5. I consider my job rather unpleasant.

Job Satisfaction 2. Michigan Organizational Assessment Questionnaire (Cammann, Fichman, Jenkins, & Klesh, 1979)

1. All in all, I am satisfied with my job.
2. In general, I like working here.
3. Generally speaking, I am very satisfied with this job.

Scales for Criterion Validity Study

Organizational Justice. (Colquitt, 2001). Five-point scale from 1 (to a small extent) to 5 (to a large extent).

Procedural justice.
The following items refer to the performance measurement procedures used to arrive at your feedback. To what extent:

1. Have you been able to express your views and feelings during those procedures?
2. Have you had influence over the feedback arrived at by those procedures?
3. Have those procedures been applied consistently?
4. Have those procedures been free of bias?
5. Have those procedures been based on accurate information?
6. Have you been able to appeal the performance feedback arrived at by those procedures?
7. Have those procedures upheld ethical and moral standards?

Distributive justice.
The following items refer to your feedback. To what extent:

1. Does your feedback reflect the effort you have put into your work?
2. Is your feedback appropriate for the work you have completed?
3. Does your feedback reflect what you have contributed to the organization?
4. Is your feedback justified, given your performance?

Motivation. Motivation Assessment System (MAS; Pritchard, 2010).

Effort Scale

1. How would you rate the amount of effort you put into your job?	Very Low	Low	Moderate	High	Very High
2. I consistently put forth the maximum effort possible at work.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
3. How much of your total, <u>maximum possible</u> effort do you put into your job?	Less than 50%	50-59%	60-69% 70-79%	80-89%	90-100%

Direction Scale

Subscale I. Knowledge of Organizational Priorities:					
1. Priorities here change so often that I am not sure which tasks are most important.	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
2. It is not clear to me how much effort to put into different parts of my job.	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
Subscale II. Agreement with Organizational Priorities:					
1. My supervisor and I agree on the way my tasks should be prioritized.	Never	Rarely	Sometimes	Usually	Always
2. My supervisor and I agree on what tasks are most and least important for me to do.	Never	Rarely	Sometimes	Usually	Always
Subscale III. Behaving According to Organizational Priorities:					
1. I match how I spend my time with what my supervisor wants from me.	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
2. I divide my time across tasks in the way that is most helpful to the organization.	Never	Rarely	Sometimes	Usually	Always
Subscale IV. Willingness to Learn Better Strategies:					
1. Trying to find better ways of doing the job is a waste of time.	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree
2. Looking for better work strategies is not a good use of my time.	Strongly Disagree	Disagree	Neither Agree or Disagree	Agree	Strongly Agree

Intent to use feedback. (Kendharnath et al., 2010)
1. I use the performance feedback I receive to identify skills that I want to develop.
2. I consider the feedback I receive while performing my job.
3. When I encounter developmental opportunities, I consider the job performance feedback I have received.
4. The feedback I receive influences my effort at work.
5. I use the feedback I receive to improve my performance.
6. I follow the recommendations I receive regarding my job performance.

Control Variables

Demographics.
What is your age? Round to the nearest year.

Please select your sex.
1. Male
2. Female

Please select the ethnicity, race, or ancestry that you most identify with.
1. American Indian or Alaska Native
2. Asian
3. Black or African American
4. Hispanic or Latino
5. Native Hawaiian or Other Pacific Islander
6. White

How many months have you worked for you current employer? Round to the nearest number of months.

Which best describes the industry in which you work?

1. Accounting/Finance/Banking/ Insurance
2. Advertising/Marketing/PR
3. Aerospace/Aviation/Automotive
4. Agriculture/Forestry/Fishing
5. Biotech
6. Business/Professional Services
7. Business Services - Other
8. Computer Hardware/ Software/Internet
9. Construction/Home Improvement
10. Consulting
11. Education
12. Engineering/Architecture
13. Entertainment/Recreation
14. Government/Military
15. Healthcare/Medical
16. Legal/Law Enforcement
17. Manufacturing
18. Media/Printing/Publishing

19. Mining
20. Non-profit
21. Pharmaceutical/Chemical
22. Research/Science
23. Real Estate
24. Retail/Wholesale Trade
25. Service Industry - Hotels/Lodging
26. Service Industry - Food/Dining

27. Telecommunication
28. Utilities
29. Wholesale
30. Transportation/Distribution
31. Transportation, Electricity, Gas, Sanitary Services
32. Other

Which best describes your position in the organization?
1. Executive (CEO/President/Owner/Partner)
2. Vice President/Executive Vice President
3. Department Director
4. Manager/Supervisor
5. Professional
6. Clerical/Administrative
7. Production/Maintenance

How many months have you worked in your current position? Round to the nearest number of months.

How many days (estimated) has it been since you last received formal feedback?
(*Note.*This item was also used for screening purposes. Participants who indicated 180 days or greater were removed from the data analyses.)

Feedback Purpose.
What is the primary purpose of your organization's formal performance feedback program?
1. Strategic - identify results and behaviors needed to carry out the organization's strategic priorities.
2. Communication - convey aspects of work the supervisor and other organizational shareholders believe are important
3. Employment decisions - input for administering rewards (e.g., promotion, pay raise) or punishment (e.g., termination, discipline)
4. Motivational/Developmental – pointing out strengths and weaknesses and discussing how to capitalize on or correct them, respectively

Feedback Medium.
Through which media are performance information typically communicated?
1. Graphs (display individual and/or group performance) Only
2. Verbal Only
3. Written Only
4. Verbal feedback and graphs
5. Verbal and written feedback

6. Verbal and written feedback and graphs
7. Written feedback and graphs
8. Verbal and mechanical (e.g., video, audio) feedback

Feedback Frequency.
How frequently do you receive formal feedback regarding your performance?
1. Daily (one or more times in a period of 24 hours);
2. Weekly (any frequency less than once per day and at least once per week;
3. Monthly (any frequency less than once per week and at least once per month;
4. Quarterly (any frequency less than once a month and at least once every four months;

Feedback Participants.
Whose performance is described by your formal feedback program?
1. Individual;
2. Group;
3. Individual and group combined

Favorability of Last Feedback.
Please recall the last time you received formal feedback regarding your performance. How favorable was it?" The rating scale ranged from 1 (Extremely Unfavorable) to 7 (Extremely Favorable).

APPENDIX D: IRB APPROVAL LETTERS

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Brandon L. Young**

Date: **November 22, 2014**

Dear Researcher:

On 11/22/2014, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	Auditing Feedback Interventions: Development and Validation of a Measure
Investigator:	Brandon L Young
IRB Number:	SBE-14-10785
Funding Agency:	
Grant Title:	
Research ID:	NA

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Joanne Muratori

Signature applied by Joanne Muratori on 11/22/2014 12:47:06 PM EST

IRB Coordinator

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Brandon L Young** and Co-PI: **Dana Joseph**

Date: **May 28, 2015**

Dear Researcher:

On 05/28/2015, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	Auditing Feedback Interventions: Development and Validation of a Measure - phase 2
Investigator:	Brandon L Young
IRB Number:	SBE-15-11327
Funding Agency:	
Grant Title:	
Research ID:	NA

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Sophia Dziegielewski, Ph.D., L.C.S.W., UCF IRB Chair, this letter is signed by:

Joanne Muratori

Signature applied by Joanne Muratori on 05/28/2015 08:41:30 AM EDT

IRB manager

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