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***IMPACT OF PERFORMANCE APPRAISAL ON EMPLOYEES'
MOTIVATION***

Artsem Lashchonau

Dissertation

Master integrated in Human Resources Management

**Research paper elaborated under the guidelines of:
PhD Professor Ileana Androniu Pardal Monteiro**

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DECLARATION OF AUTHORSHIP WORK

I hereby declare that the dissertation submitted for Master Degree in Human Resources Management at the University of Algarve is my own original work and has not been submitted or published to any other institution of higher education establishment. I further declare that all authors and sources are properly cited and indicated in the text by means of a comprehensive list of references.

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Acknowledgment and Dedication

I wish to thank, first and foremost, my supervisor, Professor Ileana Androniu Pardal Monteiro for her constant guidance, generous help, and support during the course of the dissertation research and the writing of the thesis.

Throughout my life one person has always been there during those difficult and trying times. I would like to dedicate this master thesis and everything I do to my mother Galina Laschenova.

“...it's not just learning that's important. It's learning what to do with what you learn and learning why you learn things that matters.”

Norton Juster

Abstract

This research is conducted to find out the causes of employees' motivation in the performance appraisal context. We hypothesized that higher level of perception towards the established constituent elements of performance appraisal (perceived accuracy, appraisal satisfaction, procedural, interactional, and distributive fairness) would lead to higher level of employees' motivation. We further examined if the presence of interrelations in between the established elements of performance appraisal would eventually indirectly affect employees' motivation. The data was sourced with the aid of an on-line questionnaire, while, for analyzing, we applied IBM SPSS 21.0 and AMOS 22.0 software. Results show that appraisal satisfaction and procedural fairness are significantly positively related (directly and indirectly) to employees' motivation, while perceived accuracy impacts employees' motivation just indirectly (through appraisal satisfaction, procedural and interactional fairness). Interactional fairness has significant direct negative impact on employees' motivation and significant indirect positive impact mediated by appraisal satisfaction. Finally, distributive fairness is negatively related to employees' motivation both directly and indirectly.

Keywords: employee motivation; performance appraisal; perceived accuracy; appraisal satisfaction; perceived appraisal fairness.

Resumo

Esta pesquisa tem como objetivo compreender as causas da motivação dos trabalhadores no processo de avaliação de desempenho. Colocou-se a hipótese de que uma maior percepção dos elementos constitutivos da avaliação de desempenho (exatidão percebida, satisfação com a avaliação, justiça processual, interacional, e distributiva) levaria a um maior nível de motivação dos empregados. Examinou-se a presença de inter-relações entre os elementos estabelecidos da avaliação de desempenho procurando saber se esta afetaria indiretamente a motivação dos funcionários. Os dados recolhidos por questionário on-line, foram analisados recorrendo aos programas IBM SPSS 21.0 e AMOS 22.0. Os resultados mostram que a satisfação com a avaliação e a equidade processual estão significativamente positivamente relacionados (direta e indiretamente) com a motivação dos colaboradores; a exatidão percebida está apenas indiretamente relacionada com a motivação (através da satisfação com a avaliação, a equidade processual e interacional); a justiça interpessoal tem um impacto negativo direto significativo na motivação dos trabalhadores e um impacto positivo indireto mediado pela satisfação com a avaliação. Finalmente, a justiça distributiva está negativamente, direta e indiretamente relacionada com a motivação dos colaboradores.

Palavras-chave: motivação; avaliação de desempenho; exatidão percebida; satisfação com a avaliação; justiça percebida.

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List of Abbreviations

ADM	“Accuracy” is mediated by “Distributive” to “Motivation”;
AGFI	Adjusted Goodness of Fit;
AIM	“Accuracy” is mediated by “Interactional” to “Motivation”;
APM	“Accuracy” is mediated by “Procedural” to “Motivation”;
ASM	“Accuracy” is mediated by “Satisfaction” to “Motivation”;
ASV	Average Shared Variance;
AVE	Average Variance Extracted;
BARS	Behaviorally Anchored Rating Scales;
BIWM	Blais Inventory of Work Motivation;
BSU	Belarusian State University;
BTS	Bartlett Test of Sphericity;
C.R.	Critical Ratio;
CFA	Confirmatory Factor Analysis;
CFI	Comparative Fit Index;
CLF	Common Latent Factor;
CMB	Common Method Bias;
CR	Composite Reliability;
CV	Convergent Validity;
DSM	“Satisfaction” is mediating “Distributive” to “Motivation”;
DV	Discriminant Validity;
EFA	Exploratory Factor Analysis;
ERW	Estimated Regression Weight;
FIR	Faculty of International Relations;
GFI	Goodness of Fit Statistic;
HRM	Human Resources Management;
ISM	“Satisfaction” is mediating “Interactional” to “Motivation”;
KMO	Kaiser-Meyer Olkin Measure of Sampling Adequacy;
<i>M</i>	Mean;
MBO	Management by Objectives;

MSV	Maximum Shared Variance;
nAch	Need for Achievement;
nAff	Need for Affiliation;
nPow	Need for Power;
OB Mod	Organizational Behavior Modification;
PAF	Principal Axis Factoring;
PCA	Principal Component Analysis;
PCLOSE	ρ of Close Fit;
PGFI	Parsimony Goodness of Fit Index;
PSM	“Satisfaction” is mediating “Procedural” to “Motivation”;
RMSEA	Root Mean Square Error of Approximation;
SD	Standard Deviation;
SDE	Standardized Direct Effect;
SIE	Standardized Indirect Effect;
SRC	Standardized Residual Covariances;
SRW	Standardized Regression Weight;
TV	Tolerance Value;
VIF	Variance of Inflation Factors;
WEIMS	Work Extrinsic and Intrinsic Motivation Scale.

Introduction

The purpose of this part is to provide an overview for the study. It consists of the general introduction, statement of the problem, purpose and objectives of the study, its significance, and definition of key terms. The section describing the structure of the thesis finishes the introduction part.

General Introduction

The question of employees' motivation has always been an important area of research for many companies (Grant, 2008; Ryan & Deci, 2000). That is understandable since motivation according to Franken (1994) can activate, persist, or energize definite kinds of individual's required behavior, what, in its turn, may ultimately decide the success or failure of an organization (Kim, 2006). In this case companies' desire to increase and maximize their staff's motivation seems to be logical and obvious. Many researches also emphasized their attention on understanding employees' motivation as an essential factor affecting individuals' productivity and organizational competitiveness (Grubb, 2007; Kovach, 1984; Wiley, 1997). Therefore, comprehension of all the constituents having a bearing upon employees' motivation is significantly important in terms of both future researches and organizational development.

Performance appraisal in this case serves as a significant tool of employees' motivation that deserves a special attention (Dwyer, 1998). It has not only been the focus of research activity in recent years (Banks & Murphy, 1985; Fisher, 1989; Smith, 1986), but also considered to be one of the most essential functions of human resources management (HRM) (Cardy & Dobbins, 1994). Thus, Murphy and Cleveland (1991) stated that between 74 and 89% of organizations have formal performance appraisal systems used for a number of different purposes, including handling employees' motivation. A special attention towards employees' motivation in the context of performance appraisal was also given in the works of Heneman, Schwab, Fossum and Dwyer (1989) and Murphy and Cleveland (1991).

Referring to performance appraisal it is necessary to admit that both the elements included in the system and the system itself affect employees' motivation (Cleveland &

Murphy, 1992). Selvarajan and Cloninger (2009) allocate perceived fairness, perceived accuracy, and appraisal satisfaction as important components of performance appraisal that can motivate employees. Their motivational aspects were thoroughly studied in previous researches. Thus, Cropanzano, Rupp, and Byrne (2003) and Weiss, Suckow, and Cropanzano (1999) emphasized their attention on the relationship between the fairness of performance appraisal process and its outcomes with employees' motivation; Vest, Scott, and Tarnoff (1995) claimed that perceived accuracy was positively related with employees' motivation; while DeNisi and Pritchard (2006) studied the impact of appraisal satisfaction on employees' motivation. Each of these elements brings the clarity to a general idea of motivational impact of performance appraisals conducted in organizations on employees' motivation.

Statement of the Problem

If we refer to previous studies, we can notice that performance appraisal research has come in for criticism because of its overemphasis on psychometric problems (Selvarajan & Cloninger, 2009). In this case, according to DeNisi and Pritchard (2006), appraisal researches should put an increased focus on developing functional and effective performance appraisal systems that can be useful in both understanding and affecting employees' motivation. Another important moment is determination of related to performance appraisal elements, reaction to which from employees' perspective would result in increased motivation. There were many previous researches where it was stated that different components of performance appraisal may elicit positive employees' reactions, which, eventually, lead to enhanced motivation. Thus, DeNisi and Pritchard (2006) described the importance of appraisal characteristics (such as appraisal purpose and source); Colquitt, Conlon, Wesson, Porter, and Ng (2001) discussed the apprehension of perceived fairness; Taylor, Tracy, Renard, Harrison, and Carroll (1995) and Roberson and Stewart (2006) studied employees' reactions to performance appraisal in terms of perceived accuracy and appraisal satisfaction. As it can be noticed these factors as well as their impact on employees' motivation were generally studied individually rather than in relation to an appraisal system, while little or no attention was given to the interrelations in between these elements.

Purpose and Objectives of the Study

Based on the provided in the previous section information it becomes clear why the primary purpose of this study was:

- To describe a model of causes of employees' motivation in the performance appraisal context.

This purpose covers all the problem areas requiring further examination, i.e. employees' motivation and its constituents, appraisal system and its impact on employees' motivation, relationship of the elements of appraisal system with employees' motivation as well as interrelations in between the factors of performance appraisal. In order to reach the set purpose some research objectives that guide this study have been developed:

- To identify the main elements of motivational theories that are crucial in understanding of individuals' motivation;
- To build and examine an integrative motivation model;
- To determinate the theoretical framework on the basis of integrative motivation model in performance appraisal context;
- To develop a statistical model of interrelationships between the performance appraisal components distinguished in theoretical model and employees' motivation;
- To examine the impact of performance appraisal and its constituent elements (perceived accuracy, satisfaction with performance appraisal, procedural, distributive, and interactional fairness) on employees' motivation.

The last objective can be considered to be the main one in this study. Due to its extensiveness it was decided to distinguish six sub-objectives, which are:

- To examine the relationship between perceived accuracy and employees' motivation;
- To examine the relationship between procedural fairness and employees' motivation;
- To examine the relationship between distributive fairness and employees' motivation;

- To examine the relationship between interactional fairness and employees' motivation;
- To examine the relationship between appraisal satisfaction and employees' motivation;
- To identify the cumulative effect of all the elements of observed theoretical model on employees' motivation.

For better comprehension of the functionality of performance appraisal system and the interrelations occurring in between its components (which eventually impact employees' motivation) it was decided to add seven additional objectives:

- To examine the relationship between perceived accuracy and procedural fairness;
- To examine the relationship between perceived accuracy and distributive fairness;
- To examine the relationship between perceived accuracy and interactional fairness;
- To examine the relationship between perceived accuracy and appraisal satisfaction;
- To examine the relationship between procedural fairness and appraisal satisfaction;
- To examine the relationship between distributive fairness and appraisal satisfaction;
- To examine the relationship between interactional fairness and appraisal satisfaction;

Finally, in order to fully explore all the causes of employees' motivation in performance appraisal context and to eliminate the importance of interrelations in between the components of appraisal system as well as the significance of the system itself, the final purpose was established:

- To examine the mediation effects of theoretical model elements on employees' motivation.

Significance of the Study

The understanding of employees' motivation will always be crucial for organizations in the modern competitive world. The reason for that is not just companies'

willingness to apprehend the nature of their employees' motivation, but also the economic consequences and the results obtained. Thus, according to Kingir and Mesci (2010), the research in recent years has demonstrated the presence of direct relationship between employers who value their employees' motivation and organizational performance. Thereby, it becomes obvious why many businesses lay special emphasis on the factors increasing employees' motivation. For these organizations it becomes essential in terms of their profit and productivity to distinguish the elements that increase, impact, or just being related to employees' motivation. Performance appraisal, in this case, as one of the most important HRM functions (Selvarajan & Cloninger, 2008) and an effective tool extracting a strong influence on the employees' motivation (Fisher, Schoenfeldt, and Shaw, 2003) deserves a special attention. Many studies have been conducted by linking different constituents of performance appraisal (such as fairness, outcome, process, incentives, benefits, accuracy, appraisal satisfaction, etc.) and employees' motivation (Lee & Bruvold, 2003; Long, Kowang, Ismail, & Rasid, 2013; Migiro & Taderera, 2010; Saeed et al., 2013; Shrivastava & Rai, 2012; Vest et al., 1995). However there have been limited numbers of researches studying the relationship in between these elements and employees' motivation in the system context. Otherwise speaking, not much attention has been paid to the relationships among the elements of performance appraisal and their interrelated effects on employees' motivation (both direct and indirect).

Having a squint at this study from the above mentioned perspective its results can be considered significant in many aspects. First of all, this study provides the detailed insight into the causes of employees' motivation in the performance appraisal context and gives the researcher an opportunity to obtain the knowledge in the practice of performance appraisal and its impact on employees' motivation. Further, proposed theoretical model may help organizations to understand the motivational aspects of employees' behavior much better and develop effective performance appraisal systems. The results of this study may also assist human resources personnel as well as managerial staff in satisfying and motivating their employees. In addition, on the ground of obtained findings, there were drawn some conclusions which can be helpful for organizations in terms of comprehension of the problem areas in ongoing in their companies performance

appraisal processes and elimination of the crucial elements of performance appraisal system that might affect employees' motivation mostly. Finally, the generated in this study data as well as proposed theoretical model may serve as an entry point for researchers to conduct further studies in this area.

Definition of Key Terms

Since the same keywords may mean differently in different researches it was decided to define the most important of them. That was also necessary in order to avoid ambiguities and misinterpretation regarding the meaning of essential words. The following fundamental definitions are considered critical terms for this study and therefore their clarifications are included:

Employee motivation – is the willingness to exert high levels of effort towards organizational goals, conditioned by the effort's ability to satisfy some individual need (Robbins, 1996).

Performance appraisal – is a generic term covering a variety of activities through which organizations seek to assess employees and develop their competence, enhance performance and distribute rewards (Fletcher, 2001).

Procedural fairness – is the perceived fairness of decision-making procedures (Leventhal, 1980; Thibaut & Walker, 1975).

Distributive fairness – is the fairness of decision outcomes, which is judged by comparing the individual's perception of outcomes to inputs with others or by comparing the fairness of resource allocation with the established norms (Leventhal, 1976; Adams, 1965).

Interactional fairness – is the fairness of interpersonal treatment during decision-making procedures (Bies & Moag, 1986).

Accuracy – is the strength and kind of relation between one set of scores (e.g., participants' ratings) and a corresponding set of scores (e.g., true scores), which are accepted as a standard for comparison (Guion, 1965).

Satisfaction with performance appraisal – is individuals' positive perception of the included in performance appraisal system elements (Keeping & Levy, 2000).

Perception – is the cognitive process by which an individual organizes and gives meaning to sensory input from the environment (Amos, Ristow, Pearse, & Ristow, 2008).

Also for this study some operational definitions of keywords were used. These terms were defined in a special way so as to convey their particular meaning in this research:

Rater (or appraiser, or supervisor) – is an individual that is responsible for conduction of individual's performance appraisal.

Ratee (or appraise) – is an individual that is being evaluated with performance appraisal.

Respondent (or participant) – is an individual that participated in the provided in this study survey.

Structure of the Thesis

This study includes four major chapters preceded by an introductory part consisting of the general introduction, statement of the problem, the purpose and the objectives of the study, its significance, and definitions of the key terms.

The first chapter presents the literature review. In this section related to the observed topic theoretical and empirical findings of previous researches (i.e. theories of motivation, performance appraisal studies, and interrelations in between them) are reviewed.

The second chapter is the methodology section. It gives brief information on the methods, instruments, target, and study population used for this thesis; explains the sampling and procedures used for the data collection; describes research design and its appropriateness.

Chapter three presents the results of the research. It is separated into six sections (descriptive statistics, exploratory factor analysis (EFA), confirmatory factor analysis (CFA), assumptions testing, correlation analysis, path analysis, and mediation check) and provides the analysis of the data collected through the online survey.

The fourth, and the last, chapter discusses the findings of the study. Additionally, limitations of the study, suggestions for the future researches from researcher's perspective, as well as the importance and the relevance of the findings and their implications are also covered in this chapter.

I. Literature Review

Many concepts have been proposed in order to explain the factors that have an effect on employees' motivation. Although the literature review will cover a wide variety of such theories, the primary goal of the first part of this chapter will be focused on the overview of the previous researches concerning content, process, and intrinsic and extrinsic motivation theories. The main elements of these concepts will constitute the integrative motivation model that provides a better explanation of their integrative impact. In the second part a special attention is given to performance appraisal. The purpose, process and methods are discussed here in details. At this point the components that influence both the overall employees' motivation and performance appraisal system give the rise to theoretical model of performance appraisal impact on employees' motivation. Finally, the last part is geared to understanding of performance appraisal impact on employees' motivation through the included in the theoretical framework elements. These elements (which are perceived accuracy, perceived fairness, and appraisal satisfaction) will emerge repeatedly through the whole chapter and form the hypotheses for this study. Although the literature represents these elements in an abundance of contexts, this paper will be mainly looked up to their application to employees' motivation.

1.1 Motivation Definition

The term motivation originates from the Latin word "movere", what means "to move". That gives an account of why it is regularly considered as a people's driving force. Thus, Grant (2008) considers motivation as power that imposes people to reach their goals. Armstrong (2012) view motivation as the strength that directs, galvanizes, and withstands men's behavior. It is aligned with various factors that form the behavior and lead it to a certain path. Steers and Porter (1987) defined motivation as the set of elements that manage and retain people's behavior. Motivation as a special desire that makes person act in a definite way to reach a goal was viewed by Mathis and Jackson (2008). The definition of Kreitner (1995) represents a wider understanding of motivation

and determines it as “the drive of the people’s psychological state that moves their behavior and direction”.

Employees’ motivation corresponds to a narrower concept of motivation. A specific job-related definition of motivation was determined by Robbin (2000). It is defined as the inclination to expend sophisticated efforts towards organizational goals with concern for capability and effort to fulfill personal needs. At the same time Roy (2001) view work motivation as the process of employees’ participation in achieving of organizational goals through a definite pathway. According to Jones and George (2008) motivation elucidates how employees behave during the working process and the number of their efforts, otherwise speaking how it enhances employees’ performance. In general, motivation affects employees to achieve their goals and leads them towards set objectives. Thus, employees can be considered motivated if they have clearly set goals and doing their best to achieve them (McShane & Von Glinow, 2003).

In the present context employees’ motivation is defined as the complex of psychological processes that account for the level, direction and persistence of person’s goal-oriented actions. In this framework direction refers to the individual choice among all the possible alternatives; level refers to the amount of person’s effort; and persistence refers to lengths of time individual spent for every action. Understanding of these psychological processes allows successfully guiding and motivating employees.

The lack of motivation results in employees’ discouragement, unproductiveness and not complete participation in job-related activities. Moreover, according to Werner and DeSimone (2008) top performers in the organizations won’t do their best until they are motivated. Consequently, in terms of organizational development, understanding of employees’ motivation appears to be one of the key elements of work effectiveness. Still further in order for companies to be successful and to survive in the modern competitive world organizations need motivated employees as they are highly involved in the work and achieve better results.

1.2 Theories of Motivation

It is extremely important to understand what makes employees willing to provide exceptional service, be effective at their work, reach set goals and do the best to

overcome the expectations. Answering these questions is one of the most important moments in understanding of employees' behavior and their motivation. It is not as simple to response to these queries as it seems. Instead of the answers there are plenty of theories that explain motivation concept. They can be divided into two broad categories: content theories and process theories (Campbell, Dunnette, & Lawler, 1970). Also a definite amount of consideration should be given to intrinsic and extrinsic motivation and its theories as well. Theories of each category contribute to the general understanding of job motivation but at the same time neither of them provides a definite explanation.

1.2.1 Content theories of motivation. Early researchers considered motivation in terms of understanding of individual needs. They thought that employees' goal-oriented behavior was determined by those desires. Thus, content theories emphasis mainly on the needs of individuals which can be described as psychological or physiological deficiencies that arouse behavior (Kreitner & Kinicki, 1998). They can be weak or strong, vary over time and place and be influenced by environmental, therefore it is vital to recognize those desires in regard to employees' motivation. Consequently, content theories explain the influence of satisfied and blocked needs on overall job motivation. These are the four major theories in the category: Maslow's hierarchy of needs theory, Alderfer's ERG theory, Herzberg's dual-factor theory, and McClelland's acquired needs theory.

1.2.1.1 Maslow's hierarchy of needs theory. Maslow suggests that motivation is a function of five levels of individual needs: physiological, safety, social, esteem, and self-actualization (Figure 1.1).

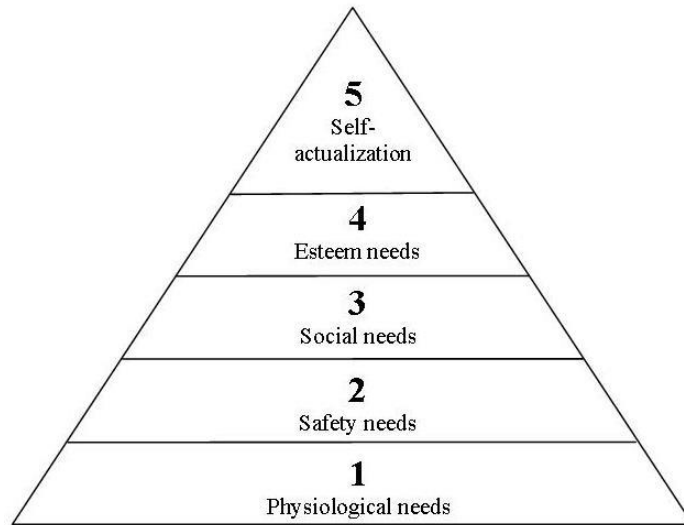


Figure 1.1. Maslow's hierarchy of needs. Adapted from "Organizational Behavior, Concepts, Controversies, Applications," by S.P. Robbins, 1998, p. 170.

They range from physiological needs at the bottom to self-actualization needs at the top (Maslow, 1970). The theory assumes that people have needs that hierarchically ranked; some of them are more significant than others and have to be satisfied before the other needs may serve as motivators. Thus, once lower-order needs (physiological, safety, and social) are satisfied, the person will emerge higher-order needs (esteem and self-actualization) while lower-order needs won't serve as motivators anymore.

Despite of the easiness and popularity of this model it has its own drawbacks. Thus, research evidence fails to prove the existence of particular five levels hierarchy of needs as they rather function in a more flexible way otherwise than in a precise sequence (Schermerhorn, Hunt, & Osborn, 2008). Moreover, there is no proven evidence that needs' satisfaction at one level decreases their importance and increases the meaning of needs at the next higher level (Wahba & Bridwell, 1974). There is also a divergence in the hierarchy of needs from the perspective of ethnic background (Adler, 1991).

1.2.1.2 Alderfer's ERG theory. ERG theory represents a modification of Maslow's hierarchy, but differs in three main aspects (Alderfer, 1969). First, Alderfer grouped human needs into three categories: existence, relatedness, and growth. Existence represents desires for physiological and material well-being (corresponding to Maslow's

physiological and safety needs); relatedness is focused on satisfaction of interpersonal relations (it corresponds to Maslow’s social needs); and growth is oriented to sustained personal growth and development (Maslow’s esteem and self-actualization). Second, if the high-level needs cannot be satisfied, lower-level needs enhance. That is called “frustration-regression” hypothesis. Thus, lower-level needs on the same basis as higher level needs may become motivators at any point. Finally, in accordance with ERG theory more than one need may operate at the same time.

Consequently, ERG theory represents a more flexible approach (compared to Maslow’s theory) towards understanding of employees’ motivation. It implicated the necessity of employees’ multiple needs recognition in order to perceive their behavior and motivate them.

1.2.1.3 Herzberg’s dual-factor theory. Frederick Herzberg approached the question of connection between individual needs and motivation in a different way. By asking employees what makes them feel good at work and what dissatisfies them, Herzberg noticed that features of the work environment that satisfy people are different from those that dissatisfy them (Herzberg, 1968). These aspects were divided into two categories: hygiene and motivator factors (Table 1.1).

Table 1.1
Hygiene and Motivator Factors of Herzberg’s Theory

Hygiene factors		Motivator factors	
Dissatisfaction	← Neutral →		Satisfaction
Quality of supervision		Promotion opportunities	
Pay		Opportunities for personal growth	
Company policies		Recognition	
Physical working conditions		Responsibility	
Relations with other		Achievement	
Job security		Work itself	

Note. Adapted from “Organizational Behavior, Concepts, Controversies, Applications,” by S.P. Robbins, 1998, pp. 171-172.

Hygiene factors represent the source of job dissatisfaction and mostly associated with the work environment. According to the dual-factor theory poor hygiene factors give the rise to job dissatisfaction and their improvement cannot increase job satisfaction, but just decrease job dissatisfaction. Otherwise, motivator factors are the source of job satisfaction. They are intrinsic and more related to job content. According to this theory the existence or absence of motivators is the key element of satisfaction, motivation, and performance (Schermerhorn et al., 2008).

Herzberg's dual-factor theory has also received its share of criticism, basically related to the fairness of allocation of factors towards hygiene or motivator. Despite its limitations, this theory gives attention to the work environment as to the field of impact on employees' motivation.

1.2.1.4 McClelland's acquired needs theory. Among all the content theories of motivation, McClelland's acquired needs theory received the greatest amount of support (Kreitner & Kinicki, 1998). According to McClelland, people obtain three categories of needs according to their life experiences. These are: need for achievement, or nAch (the desire to do things more efficient and better, to solve problems and be responsible for complex tasks), need for affiliation, or nAff (the desire for warm and friendly relations with others), and need for power, or nPow (the desire to control and influence others behavior). The differences in these categories can be linked with the set of work preferences and as a result with work motivation.

McClelland identified four main characteristics for nAch people, they are: necessity in innovativeness and feedback, personal responsibility for performance, and preference to moderate difficulty of tasks (Mullins, 1996). Based on these features the existence of significant differences in achievement motivation between people was confirmed. Thus, people with high nAch are challenged more by opportunities, goal-setting and personal tasks with strict deadlines than those with low nAch. Moreover, money for them seems more likely to symbolize feedback to their performance or achieved goals. McClelland (1962) suggested that nAch results from environmental impact and that employees can be trained to attain higher need for achievement. A four steps program was developed to reach high nAch and included: feedback richness,

finding best performers, modification of self-image to the success direction, and positive thinking (Mullins, 1996).

Employees with nPow, conversely, are more oriented towards control and influencing others. They prefer to work in competitive and status-oriented environment. Moreover, the need of power is considered as one of the prime features for motivation in managerial positions (McClelland & Burnham, 1976). Thus, staff with high nPow is generally motivated by obtaining an executive position or at least the one with a sufficient influence.

Finally, nAff individuals mostly prefer cooperative environment with high degree of understanding and friendship atmosphere. Employees that have strongly marked need of affiliation are good team players. They are mainly motivated by colleagues and management approvals. Consequently, this theory has a substantial insinuation on employees' motivation from a perspective of individual needs. All the content theories can be united and compared in Table 1.2.

Table 1.2

Comparison of Content Theories

	Maslow	Alderfer	Herzberg	McClelland
Lower-order needs	Physiological needs	Existence	Hygiene factors	Affiliation
	Safety needs			
	Social needs	Relatedness		
Higher-order needs	Esteem needs	Growth	Motivator factors	Power
	Self-actualization		Achievement	

As it can be seen from the table all the four theories are interrelated. They are addressed towards studying of people needs. In general, needs represent individual's unsatisfied physiological or psychological desires, clarify on-the-job behavior or attitudes, and create tensions that impact the overall behavior. Thus, according to content theories people are motivated by their unsatisfied needs. The presence of unsatisfied needs creates a special unfavorable internal tension that must be solved. That tension

stimulates different drives within individuals, otherwise willingness to take the action, what effects in specific effort or behavior. The execution of that behavior results in individual's performance that eventually leads to satisfaction. But once the need is satisfied, it no longer motivates the person, so he/she comes back to unsatisfied need. All of these elements can be represented as the basis of integrative motivation model (Figure 1.2).

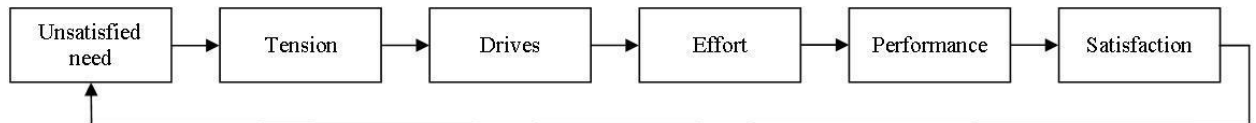


Figure 1.2. Integrative Motivation Model: basis.

It should be mentioned that motivated employees reside at the state of tension and with an eye to relieve it they exert effort. The higher the tension, the higher the effort level (Robbins, 1998). If actions lead to the need satisfaction, there is a reduction in tension. Job motivation should be also shaped by organizational goals. In this case employees' reduction of tension effort must be directed towards their accomplishment as well. Moreover, employees' needs and organizational goals should be compatible and consistent; otherwise the high level of effort may run against the interests of organization.

1.2.2 Intrinsic and extrinsic motivation. Various individuals' needs can be categorized in many ways as physiological, social, or other motives (Mullins, 1996). Motivation, in this case, may be different not only in the level (how much), but also in the orientation (what type). In motivational orientation it is mainly studied the attitudes and goals that lead people to the action. Thus, Deci and Ryan (1985) outline two types of motivation: intrinsic and extrinsic. There are different motivators or goals that bring people to action in each type. In intrinsic motivation action is defined by inherent interest or enjoy, while in extrinsic motivation separable outcomes lead to it.

1.2.2.1 Intrinsic motivation and Cognitive Evaluation Theory. Ryan and Deci (2000) define intrinsic motivation as an activity of inherent satisfaction (fun) rather than of separable outcomes (rewards, pressures, etc.). Intrinsic motivation exists both among

individuals, because just some people may be motivated for chosen activities and in relationship between individuals and activities, because not every person can be motivated by the chosen task. Because of that difference there are two dimensions of intrinsic motivation: interest to the task and satisfaction from the engagement in the activity. Intrinsic motivation is linked to different psychological “rewards” as feeling of achievement, responsibility, and challenge, sense of accomplishment, receiving appreciation, opportunity to use one’s ability, etc. (Mullins, 1996).

There were many researches on intrinsic motivation and most of them (including “Self-Determination Theory”) were framed in terms of facilitating factors of intrinsic motivation, but not many focused on the factors undermining it. Deci and Ryan (1985) in their “Cognitive Evaluation Theory” (the sub-theory of “Self-Determination Theory”) defined the factors that produce variability on intrinsic motivation. They argued that interpersonal events and structures promoting feelings of competence during actions increase intrinsic motivation by satisfying basic psychological needs for competences (Ryan & Deci, 2000). They specified that the feeling of competence will enhance intrinsic motivation if it promotes a sense of autonomy. That means that in order to maintain and increase intrinsic motivation employees should experience a sense of self-efficiency as well as autonomy. It is necessary to point out that most of other researches of the environmental event effects on intrinsic motivation concentrated on the problem of autonomy versus control rather than on the issue of competencies. Deci (1971) confirmed that extrinsic awards undermine intrinsic motivation. Later on, many researches confirmed these findings and added not only rewards, but also threats, deadlines, competition pressure, and directives as decreasing intrinsic motivation because they act as controllers of people’s behavior (Ryan & Deci, 2000). Opportunity for self-direction, per contra, increases intrinsic motivation by creating a greater autonomy for employees (Zuckerman, Porac, Lathin, Smith, & Deci, 1978).

1.2.2.2 Extrinsic motivation and Organismic Integration Theory. Despite of the fact that intrinsic motivation is important, there are many types of activities in which people are not intrinsically motivated. In that case extrinsic motivation (which refers to doing activities for their instrumental value) can be used. Extrinsic motivation is linked to

tangible rewards as promotions, job security, wages, health insurance, benefits, work environment, etc. (Mullins, 1996).

In “Organismic Integration Theory” (which is second sub-theory of “Self-Determination Theory”) Ryan and Deci (1985) determined various forms of extrinsic motivation as well as factors that influence the behavior (Figure 1.3).

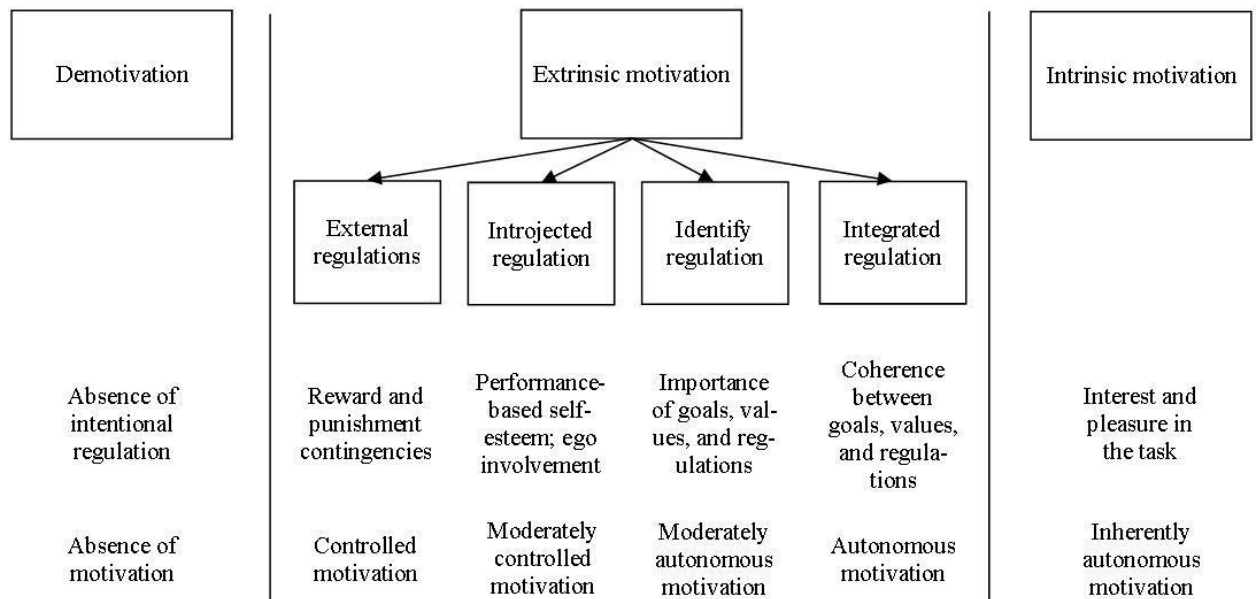


Figure 1.3. Organismic Integration Theory. Adapted from “Intrinsic and Extrinsic Motivation: Classic Definitions and New Directions,” by R.M. Ryan and E.L. Deci, 2000, *Contemporary Educational Psychology*, 25, p. 61.

There were three forms: demotivation, intrinsic motivation, and extrinsic motivation with its four sub-forms: external regulation, introjected regulation, identified regulation, and integrated regulation. Demotivation can be defined as the lack of willingness to act or perform. It may be caused by many reasons. Thus, Deci (1975) claims that the motive for demotivation is absence of feeling of competence, while Seligman (1995) asserts that it is the lack of believe that activity will lead to desired consequences. External regulation can be defined as most controlled form of extrinsic motivation. Employees’ behavior on this level is mostly directed by the satisfaction of external demand through rewards obtaining. In this case employees have the strong feeling of control. Introjected regulation, in its turn, still has its portion of control over

employees, but in opposition with external regulation affects people by pressuring them in order to avoid concern and guiltiness, or to attain self-enhancement and self-esteem. Identified regulation is a more self-determined form of intrinsic motivation. It is an employee's personal choice to accept the regulations as they have individual importance or may lead to benefits. Finally, integrated regulation can be described as extrinsic motivation that is entirely assimilated to the self. In this case employees run the self-examination and as a result add the new regulations to their values and beliefs. This form of motivation has many similarities with intrinsic motivation (as being autonomous and not conflicted), but at the same time it still has an instrumental value.

It is necessary to point out that the higher level of motivation autonomy (the closer it is to intrinsic motivation) the bigger the consequences. Thus, according to Connell and Wellborn (1990) more autonomous extrinsic motivation results in greater engagement; Miserandino (1996) claims that it leads to better performance, while Sheldon and Kasser (1995) showed the increasing of psychological well-being.

Consequently, employees' performance depends on their intrinsic and extrinsic motivation which eventually results in the satisfaction level of their needs. In other words, employees' job performance can be evaluated through intrinsic (the level of autonomy, feeling of competencies, interest towards the job, etc.) or extrinsic (promotions, pay raise, etc.) rewards. Thus, these rewards can be added to integrative model of motivation (Figure 1.4).

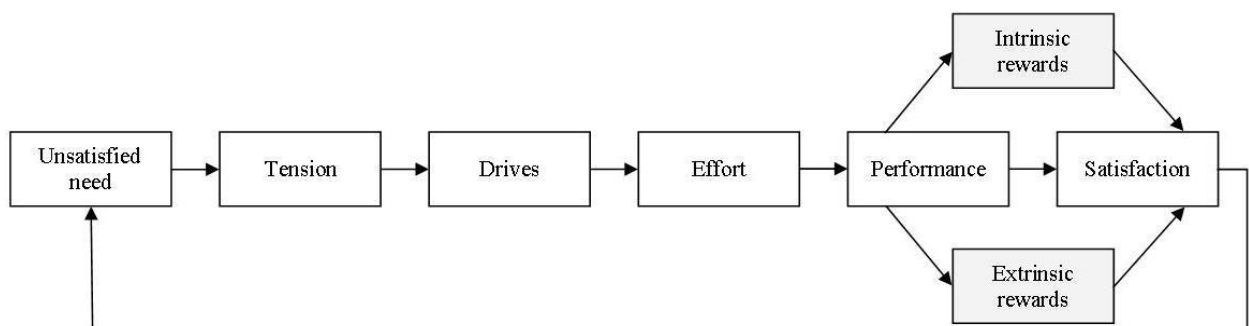


Figure 1.4. Intrinsic and extrinsic rewards in Integrative Motivation Model.

1.2.3 Process theories. These theories in contrast to content approach consider motivation as a rational process. They mainly concentrate on the cognitive process that

appears in the employees' minds and impact on their behavior (Schermerhorn et al., 2008). Individuals both examine the working environment and develop their feelings and reactions what allows them to respond in the definite way. While content theories emphasize their attention on individual needs, a process approach is mostly oriented on identification of employees' behavior in accordance with existing rewards and work opportunities. The four major theories of this category are equity theory, expectancy theory, reinforcement theory, and goal-setting theory.

1.2.3.1 Equity theory. It is generally defined as one of the motivational models that clarify how employees struggle for fairness and justice in social interactions and give-and-take relationships (Kreitner & Kinicki, 1998). The basis for equity approach is social comparison. Thus, according to Adams (1963) motivation is a function of employee's comparison of his/her rewards and efforts made towards rewards and efforts made by other employees. This equity can be presented by the next equation (Figure 1.5).

$$\frac{\text{Person's outcomes}}{\text{Person's inputs}} = \frac{\text{Other's outcomes}}{\text{Other's inputs}}$$

Figure 1.5. Equity theory equation. Adapted from "Human Resources Management in Sport and Recreation," by P. Chelladurai, 2006, p. 112.

Adams believes that this equation can be used in explaining the motivational consequences of any on-job rewards. Consequently, if an employee feels that he/she received less than others when comparing his/her and the others' work inputs, there will be negative inequity. Otherwise if the situation is reverse there will be positive inequity. As consistent with Adams (1963), both positive and negative inequity will result in employees' motivation to restore a feeling of equity. Thus, in case of perceived negative inequity employees are more likely to change work inputs or outputs, reconsider comparison points, or even quit (Schmidt & Marwell, 1972). At the same time positive inequity makes people increase the quantity or quality of their work or even both of them (Greenberg & McCarty, 1990). In general, equity theory can be presented as intermediary motivational impact to the employee (Figure 1.6).

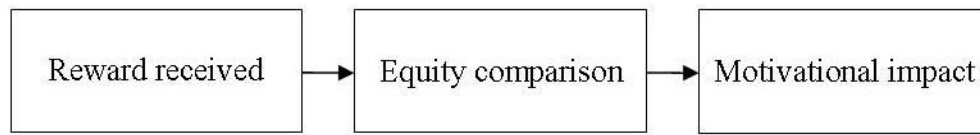


Figure 1.6. Intermediary position of equity theory. Adapted from “Organizational Behavior,” by Schermerhorn et al., 2008, p. 117.

In equity theory employees in interactions are motivated by the sense of fairness based on the social comparison, and that is why not every reward may work as intended. If the reward is not fair and equitable, it may lead to the negative consequences. Thus, motivational outcomes in equity theory are determined by the recipient perception of the rewards in context and in terms of fairness.

In equity theory perceived fairness is considered to be a motivator with its limitations towards rewards. For this reason starting from 1970s researchers of the workplace fairness began to look at justice from the different perspective. Thus the question of organizational justice was raised. According to Sheppard, Lewicki, and Minton (1992) it represents the fairness and equity of employees’ view towards practices of their workplace and consists of three categories: procedural justice, distributive justice, and interactional justice.

Procedural justice can be described as degree to which perceived fairness of the procedures and processes used to make allocation decisions (Kreitner & Kinicki, 1998). According to Alge’s (2001) research, employees do care about procedural justice concerning many organizations decisions as: performance appraisal, recruitment, layoffs, etc. The meaning of procedural justice increases among employees together with failing to get expected outcomes (Brockner & Wiesenfeld, 1996). There are many ways to achieve procedural justice as noticing employees before hiring, firing or disciplining them, involving them into decision-making processes, informing them, etc. (Kidwell, 1995).

Distributive justice is the degree of perceived fairness towards distribution and allocation of rewards and resources (Kreitner & Kinicki, 1998). It is described as the level to which all the employees are treated the same under the policy.

Interactional justice refers to the degree to which the people affected by a decision are treated with dignity, respect, and kindness in interpersonal relations. Interactional justice may motivate employees even in case of negative outcomes. Thus, in case of pay cut, treatment with respect and dignity results in stress decreasing and motivates to increase results (Greenberg, 2006).

Paying careful attention towards all the three categories of justice will definitely be beneficial for employees. Moreover, justice perceptions results in positive outcomes for the companies while injustice is mostly harmful and contributes to stress (Greenberg, 2004). Treating employees at work with the respect to procedural, distributive, and interactional justice create higher level of employees' commitment to organizations, increase performance and eventually affect their motivation. Moreover, employees' perception of justice categories that is based on social comparison form the obvious motivational influence.

Consequently, if employees face inequity in perceived fairness (procedural, distributive, or interactional) through allocation of extrinsic and intrinsic rewards compared to their inputs, they are likely to be dissatisfied and have the feeling of unsatisfied needs. When this occurs individuals' tension leads them to take actions that would restore the perceived inequity. The process of rethinking is happening right before an employee makes an effort. These main principles are added to integrative model of motivation (Figure 1.7).

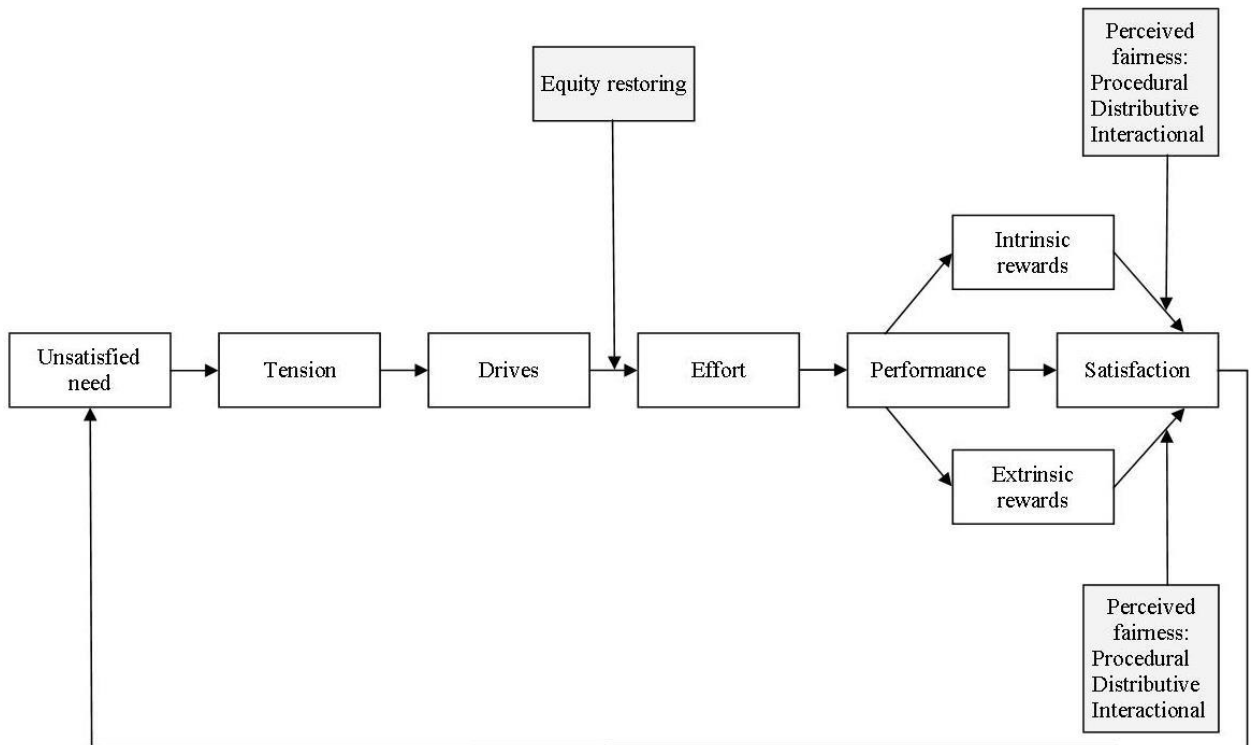


Figure 1.7. Equity theory in Integrative Motivation Model.

1.2.3.2 Expectancy theory. Motivation in expectancy theory results from desired combination of employees' expected outcomes. In other words it is a people's rational calculation of the applied effort (Porter & Lawler, 1968). Thus, according to Vroom (1964) employees' motivation cuts down to the simple decision: how much effort to endeavor in a specific situation. That decision should be based on the next coherence of expectation: effort→performance and performance→outcome. Consequently, people's motivation will depend on the degree of the next believes:

- Effort will lead to adequate performance (expectancy);
- Performance will be rewarded (instrumentality);
- Value of the reward will be positive (valence).

Vroom (1964) defines each of these concepts. Thus, expectancy is shown up as individual belief that work effort will be followed by a particular level of performance, or effort→performance expectation. According to Pinder (1984) there are factors that influence employees' expectancy perception, such as: self-esteem and self-efficiency, supervisor and subordinates, both applicable information to complete the task and

previous experience. Instrumentality is represented as performance→outcome expectation. It refers to individual expectation that his/her performance will result in different work outcomes. Valence refers to the value the individual (both positive and negative) places on outcomes. Feather (1995) suggests that valence show employees' personal preferences. Accordingly, the outcome's valence will depend on individual's needs as it will refer to different consequences connected to pay, promotion, recognition, etc. In his theory Vroom posits that all the elements are related to each other and influence on employees' motivation. It can be presented in the equation (Figure 1.8).

$$\text{Motivation} = \text{Expectancy} * \text{Instrumentality} * \text{Valence}$$

Figure 1.8. Motivational multiplier effect of the elements of Vroom's theory. Adapted from "Organizational Behavior," by Schermerhorn et al., 2008, p. 111.

As it can be seen from the equation, there is a multiplier effect of three constituents that affect motivation. Thus, to create a high level of work motivation it is necessary to maximize expectancy, instrumentality, and valence.

It is possible to influence on all three perceptions (Cook, 1980). Expectancy can be improved through selection of employees with appropriate skills, train them correctly, and set clear performance goals. Instrumentality can be enhanced by clarification of performance-rewarded relations and further confirmation of the fairness and accuracy of their implementation. Finally valence can be influenced through identification of individual needs and further adjusting of rewards to those needs. The overall implication of Vroom's expectancy theory is shown in Figure 1.9.

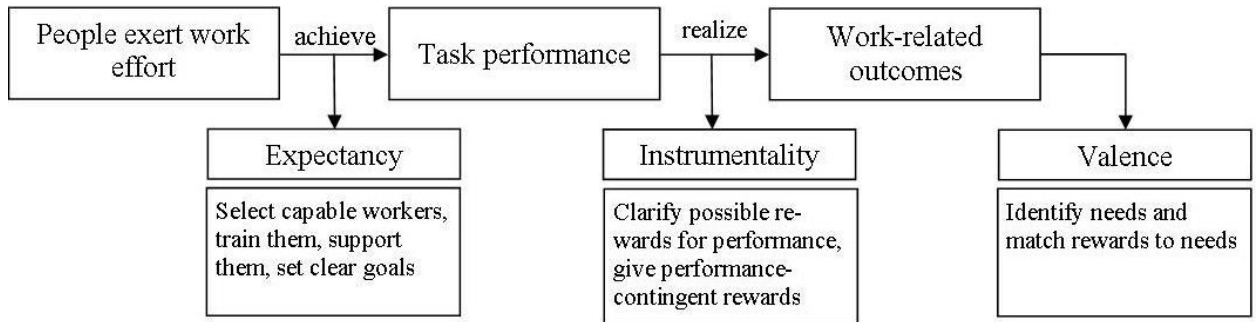


Figure 1.9. Vroom's expectancy theory implication. Adapted from "Organizational Behavior," by Schermerhorn et al., 2008, p. 120.

Consequently instrumentality and valence, in accordance with expectancy theory, pertain to employees' anticipations. These elements serve as individuals' drives that stimulate them to make an effort. To be precise, employees compare their efforts to the possible outcomes and its value for them. Expectancy, for its part, refers to employees' perception that their effort will lead to the definite level of performance. Thus, intended drives of individuals' behavior result in actual efforts reinforced by employees' credence that they are able to perform well. An important element in expectancy theory is the accuracy of reward's allocation as it significantly influences employees' perception of satisfaction and the valence of outcomes. Taking into consideration all the above mentioned facts, elements of expectancy theory can be added to the integrative model of motivation (Figure 1.10).

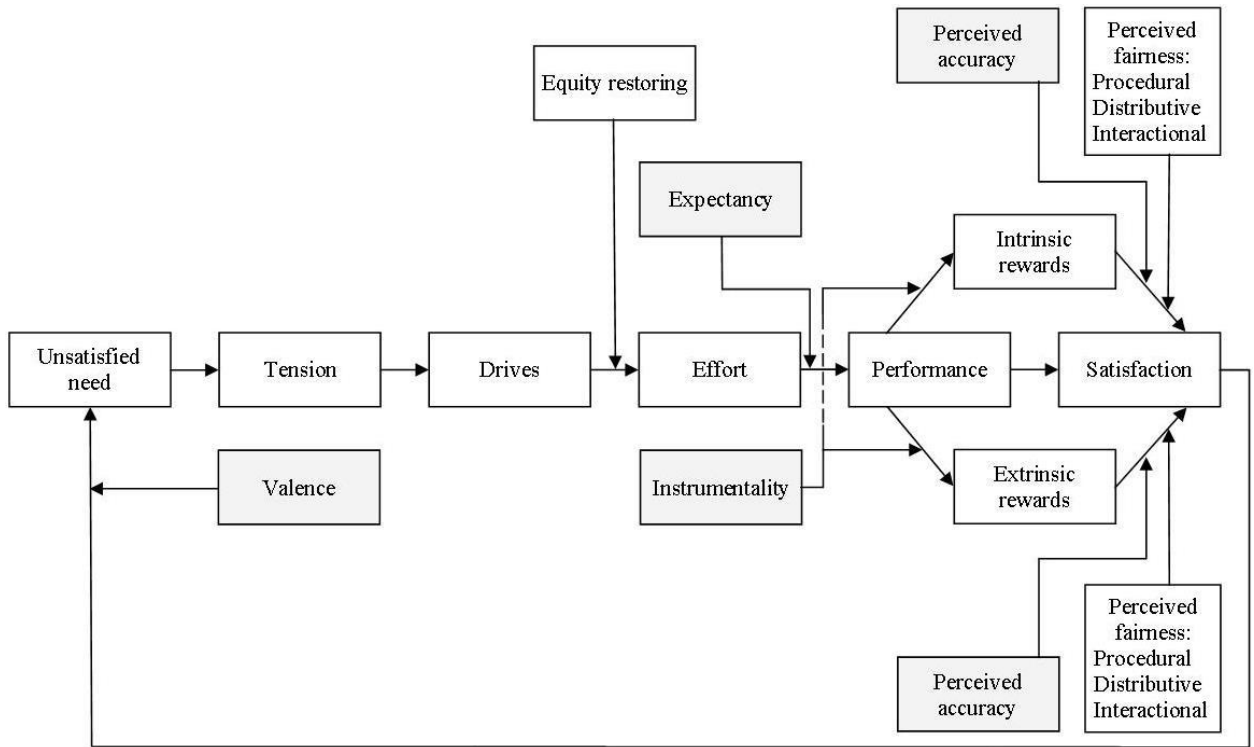


Figure 1.10. Expectancy theory in Integrative Motivation Model.

1.2.3.3 Reinforcement theory. Skinner (1969) defines reinforcement as a stimulus applied to a behavior that will strengthen or hinder a desired outcome. Reinforcement theory is mainly based on the works of Pavlov (behavioral conditioning) and Skinner (operant conditioning). Behavioral conditioning is represented as a form of learning in which association is used to influence people’s behavior by force of stimuli manipulation, while operant conditioning is mainly referred to the process of behavior controlling by influencing on the consequences. There are two main differences between behavioral and operant conditioning. Behavioral conditioning is involuntary; an association is created between two events that are not necessary related, while in operant conditioning of Skinner (1969) control is conducted through manipulation of consequences; and there is a special intension to examine antecedent, behavior, and consequences.

Reinforcement theory is also complemented by the Thorndike’s law of effect and extrinsic rewards. The law of effect is represented as observation that behavior resulting in positive outcomes tends to be repeated while behavior that results in negative consequences is not likely to be repeated (Thorndike, 1911). What concerns extrinsic

rewards, they are considered from the reinforcement point of view in organizational behavior researches as factors that influence individual's behavior (Schermerhorn et al., 2008). Extrinsic rewards appear to be both significant reinforcers and environmental outcomes that noticeably impact through the law of effect on employees' behavior. Extrinsic rewards that can be allocated to the employees may include rewards with direct cost, like promotion and bonuses, and rewards without direct cost, such as smile and recognition (Figure 1.11).

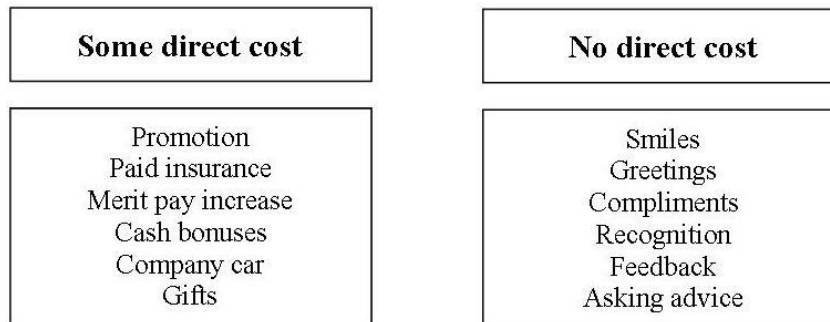


Figure 1.11. Extrinsic rewards allocated to employees. Adapted from “Organizational Behavior,” by Schermerhorn et al., 2008, p. 96.

All the four elements, videlicet behavioral conditioning, operant conditioning, law of effect and extrinsic rewards are combined in organizational behavior modification (OB Mod). OB Mod can be defined as regular reinforcement of anticipated work behavior and nonreinforcement or punishment of undesirable behavior. It includes four basic reinforcement strategies: positive reinforcement, negative reinforcement, punishment, and extinction (Luthans & Kreitner, 1985).

Positive reinforcement. Skinner (1969) determines positive reinforcement as the administration of positive outcomes that enhance the willing to repeat the desirable behavior in the analogous settings. It should be mentioned that positive reinforcers and rewards are not necessarily the same. Reward can be considered to be a positive reinforcer only if there is an evidence of the improvement of employee's behavior. There are two principles of positive reinforcement that maximize its value: the law of contingent reinforcement and the law of immediate reinforcement (Schermerhorn et al., 2008). The first one assumes that the reward must be contingent to the desired behavior and the

second one claim that the reward must be given as soon as possible after the desired behavior (Miller, 1975).

All the while positive reinforcement can be divided into continuous (reward is administered each time when a desired behavior occurs) and intermittent (only periodical reward of desired behavior) reinforcement. Both of these reinforcements have influence on employees' behavior, while continuous reinforcement elicits the desired behavior much sooner, but at the same time it is more costly and disappears faster when no longer presented. Intermittent reinforcement, on the other hand, results in longer acquired behavior, otherwise speaking it is more resistant to destruction and can be given according to variable or fixed schedules (Figure 1.12).

	Interval	Ratio
Fixed	Fixed interval <hr/> Reinforcer given after a given time Weekly or monthly paychecks Regularly scheduled exams	Fixed ratio <hr/> Reinforcer given after a given number of behavior occurrences Piece-rate pay Commissioned salespeople: certain amount is given for each dollar of sales
Variable	Variable interval <hr/> Reinforcer given at random times Occasional praise by boss on unscheduled visits Unspecified number of pop quizzes to students	Variable ratio <hr/> Reinforcer given after a random number of behavior occurrences Random quality checks with praise for zero defects Commissioned salespeople: a varying number of calls are required to obtain a given sale
	Time-based	Behavior occurrence-based

Figure 1.12. Schedules of positive reinforcement. Adapted from “Organizational Behavior,” by Schermerhorn et al., 2008, p. 98.

Thus, fixed-interval schedules are when the behavior is first appeared but after a given interval of time. Fixed-ratio schedules in contrast end up in reward every time a

certain amount of acquired behaviors occurred. Variable-interval schedules result in reward at random times while in variable-ratio schedules rewards appear after a random number of occurrences. Moreover, variable reinforcement schedules cause more consistent forms of desired behavior than fixed ones (Schermerhorn et al., 2008).

Negative reinforcement. Negative reinforcement (or avoidance) is a second reinforcement strategy in OB Mod. It is also used to increase the desired behavior of employees. Skinner (1969) determines it as the withdrawal of negative consequences that enhances the willing to repeat the desirable behavior in the analogous settings. There are two main aspects of this strategy: implementation of negative consequences in case of undesired behavior and their withdrawal when desirable behavior appears. The term avoidance can be explained by the willing of the employee to avoid the negative consequences by carrying out the desired behavior. At the same time negative stimulus may be unsuccessful in stimulating the desired behavior and result in unpredicted behavior.

Punishment. Punishment, on contrast to positive and negative reinforcement, is focused on discouraging of negative behavior. Skinner (1969) defines it as the administration of negative outcomes or the withdrawal of positive ones that tend to reduce the willing to repeat the desirable behavior in the analogous settings. Some researches show positive reinforcement from punishment implementation, however in general it leads to low job satisfaction and results in poorer performance (Korukonda & Hunt, 1989). Thus, punishment can be handled poor or well, and it depends on management and organization as well.

Extinction. Extinction is oriented on pulling out of the reinforcing outcomes for a given behavior. Its main intension is the elimination and weakening of undesirable behavior.

Thus, reinforcement strategies show the ability of individuals to learn the desired behavior. Both positive and negative reinforcements are applied to strengthen that behavior and improve the work quality. Punishment as well as extinction should be used to enfeeble undesirable behavior of high and low rates agreeably. Both of them may result in the withdrawal of positive outcomes or the administration of the negative ones. Consequently, the implementation of reinforcement theory is mainly possible through the

allocation of extrinsic rewards. The process of delivering those rewards is brought into action by the variable and fixed schedules (what actually can be done in both directions). Therefore organizations work out their reinforcement strategies. These strategies are mainly directed to impact the individuals' performance→outcome understanding (instrumentality), and perception of rewards that they may receive (valence). Moreover, scheduling of extrinsic rewards and their implementation through reinforcement strategies influences the level of employees' efforts. All the above mentioned elements can be added to integrative model of motivation (Figure 1.13).

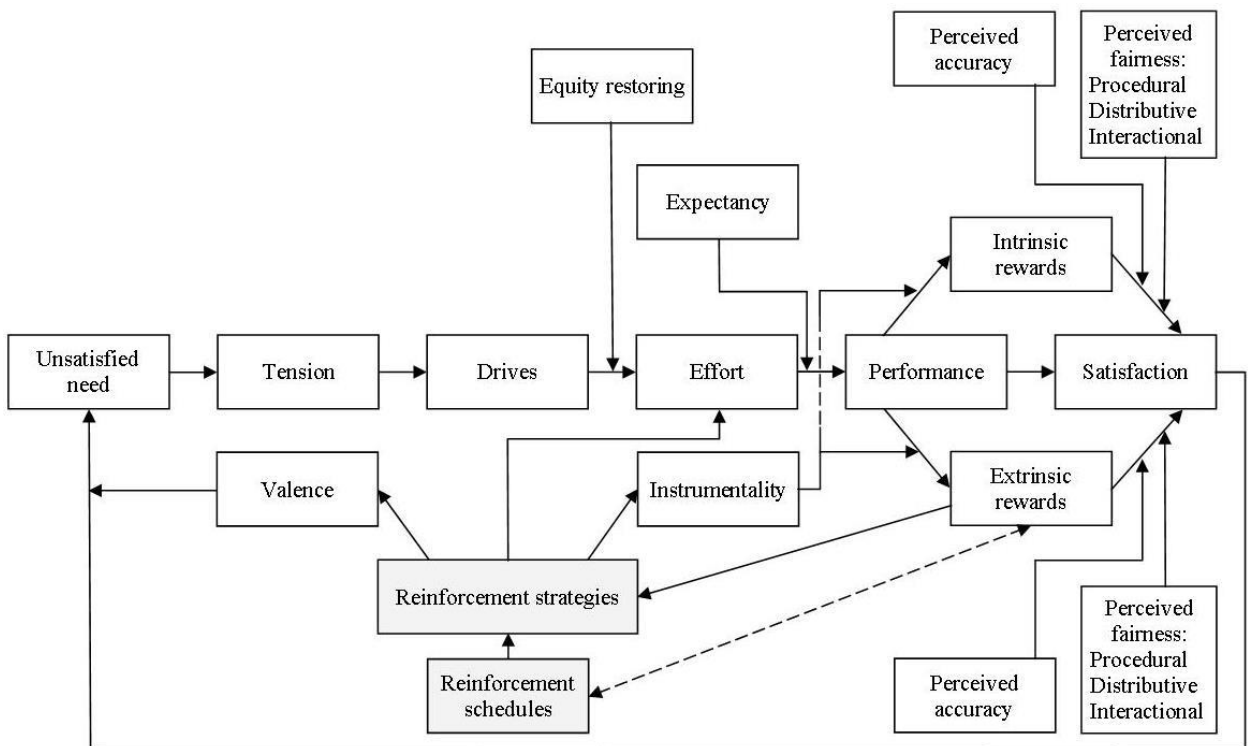


Figure 1.13. Reinforcement theory in Integrative Motivation Model.

1.2.3.4 Goal-setting theory. While goals appear to be an important aspect of work motivation, they are often being unaddressed. With both clear and properly set goals employees are more likely to move in the right direction towards their accomplishment. That is why goal setting theory turns out to be one of the most practical and influential theories of motivation (Locke & Latham, 1990). It's been supported by thousands of studies with strong evidence of its relation to performance improvements and motivation (Ivancevich & McMahon, 1982). Moreover, according to Pritchard Roth, Jones, Galgay,

and Watson (1988) there is a significant performance improvement of 10% to 25% from applying of goal-setting theory.

Goals setting can be defined as the process of developing, discussing and formalizing of employees' aims and objectives that they should achieve (Locke, Shaw, Saari, & Latham, 1981). Research on goals setting implications can be summarized in the next guidelines (Schermerhorn et al., 2008):

- More difficult goals result in higher performance compare to those that are less difficult;
- In order to achieve higher performance goals should be clear and specific;
- Presence of feedback or results posting motivates employees by encouraging the setting of higher goals;
- Acceptable goals and the presence of commitment to them are more likely to motivate employees.

Thus, it is obvious that goals setting influence on employees motivation. Moreover, speaking about goals setting and its motivational potential, a widely used concept called management by objectives (MBO) should be mentioned. MBO is defined as management system that includes involvement of supervisor and subordinate in goal setting, feedback, and decision making processes (Drucker, 1954). According to Rodgers and Hunter (1991) a meta-analyses of 18 studies showed that employees' job satisfaction was significantly connected to companies' engagement in MBO implementation. This shows positive outcomes of MBO implementation and its influence on overall satisfaction and employees' motivation.

Despite of the positive results MBO has its drawbacks. Thus, there are difficulties with recording and documenting of goals and accomplishments, what creates overload of paper-work, there is also too much focus on rewards and punishments as well as on top-down goals which is easier to achieve individually rather than by team.

Goals (both individual and organizational) create a special sense of tension between the current employees' position and the preferred one. This tension forms desires or drives of individuals' behavior that leads them towards the goal accomplishment in order to satisfy the aroused tension. That makes employees develop plans and strategies of goals achievement which eventually impacts their behavior and

appears in the form of efforts. Far and by, goals stimulate the employees' tension, which, for its part, gives rise to the individuals' desires and ultimately lead to efforts. Thus, goals theory can be added to integrative model of motivation and complete it (Figure 1.14).

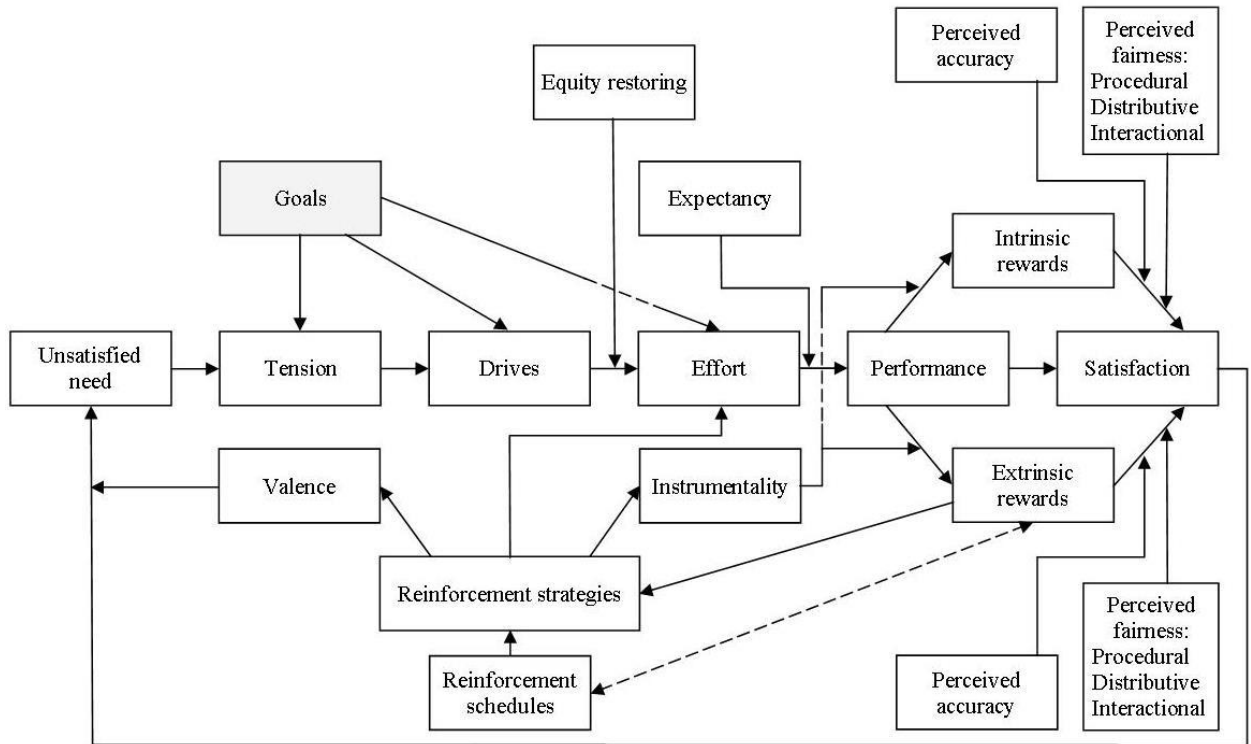


Figure 1.14. Goal-setting theory in Integrative Motivation Model (completed model).

1.3 Considerations of Motivation Theories Implementation

It is practically impossible to take one of the motivational theories and apply it in its “pure” form to the working process. Thus, Mitchel (1982) says that there are factors that may not be articulated either systematically or regularly and they mingle to the application of motivation theory. In this case using the integrative model of motivation is much more beneficial than each several theory.

Kreitner and Kinicki (1998) mentioned that needs should be addressed before the implementation of any motivational program. Consequently employees' needs are the basis and need-based theories represent the foundation of employees' motivation.

If we give a glance at integrative motivational model (Figure 1.14) we can see that, despite the importance of all the elements, they can be split into those having a

direct impact on employees' need satisfaction and those being mostly directed towards formation of individuals' desires or special kinds of behavior (efforts) to satisfy a particular established tension. Thus, equity restoring, instrumentality valence, expectancy, reinforcement strategies, and schedules mainly form the desires, drives, or specific behavior that leads to the effort and finally results in performance. Intrinsic and extrinsic reward allocation together with perceived fairness and accuracy are, on the other side, in charge of the direct process of needs' satisfaction. These elements are essential, because the satisfaction depends on their execution level and influences overall employees' motivation. In such a way it should be discussed more thoroughly.

Just so, according to expectancy theory and its performance contingent rewards, employers should consider the accuracy and fairness of their reward systems. If rewards are not distinctively connected to performance, the promise of enhanced rewards will not induce increased efforts and better performance. Moreover, decrease in employees' motivation may result in the belief of unfair allocation of rewards. Equity theory explains these findings with its emphasized attention to reward allocation's fairness that actually influences overall employees' motivation.

As motivation is generally used to increase performance, it should be viewed as an intermediate between employees' needs and their performance outcomes. In this case, the method used to evaluate performance plays a huge role (Kreitner & Kinicki, 1998). In order to accurately distinguish good or bad performer it is necessary to apply a valid performance appraisal system. In line with equity and expectancy theories employees' motivation can be destroyed by inaccurate performance appraisal. As inaccurate performance ratings make it almost impossible to evaluate motivational programs and decrease employees' motivation, it is vital for the companies to assess the accuracy and validity of appraisal system. Performance appraisal characteristics as goal-setting, feedback, etc. play an important role in employees' motivation. Consistent with goal-setting theory, motivation is generally goal-oriented, and the process of setting and developing goals significantly motivates employees. The presence of feedback in its turn provides the necessary information to keep employees oriented on their tasks and activities. It also should be mentioned that integration of rewards in appraisal system plays an important role in implementation of motivational theories. That allows

distinguishing individual and group rewards as well as increasing the fairness and accuracy of their allocation. Finally, organizational culture should be mentioned as one of the factors contributing to the level of effectiveness of motivation theories implementation. Thus, positive and self-enhancing cultures are more likely to increase employees' motivation than those with surplus of fraud, fault, and blame. Consequently, in the process of implementation of any motivational program, or integrative motivational model we should start out from the next criteria:

- Consideration of employees' needs is essential before starting any motivational program;
- Determine equity restoring, instrumentality valence, expectancy, reinforcement strategies and schedules as tools in establishing of tension, drives and efforts in employees' behavior;
- Rewards allocation, fairness, and accuracy are among the most significant characteristics that influence overall employees' motivation;
- Performance appraisal system serves as the integration tool of elements of employees' motivation.

Thus, due to the presence of significant impact of performance appraisal system on employees' motivation it should be analyzed in more details.

1.4 Performance Appraisal Defined

As performance itself turns up to be the result of work (Bernadin, Kane, Ross, Spina, & Jhonson, 1995), the question of its measuring and controlling becomes an essential part in terms of achieving the established organizational goals (Boxall & Purcell, 2003). In this case performance appraisal serves as human resources concept that measures and evaluates employees' performance. Thus, Robbins, Bergman, Stagg, and Coulter (2000) define it as the evaluation of individuals' job performance and the setting of personnel goals. In the meantime performance appraisal has many other definitions. Dowling, Welch, and Schuler (1999) determine it as one of the processes within the whole performance management system; Dessler (2005) considers it as a comparison of employees' past and present performance with the established standards. At the same time Beach (2005) presents performance appraisal as the employees' organized

evaluation in concordance with their position and prospective development. Mooney (2009), on the other hand, considers performance appraisal as the process not just linked to the results but also connected to definite employees' behavior adopted in order to achieve established objectives. All of these definitions may be summarized as Noe, Hollenbeck, Gerhart, and Wright (2010) proposed that performance appraisal is the process of measuring and evaluating employees' performance through information collection of individual job performance data within the company.

It should be mentioned that performance appraisal is not just a tool to measure employees' performance, but also an instrument in the process of identification of the individuals' lacking areas. This allows understanding how well people perform and their personal areas of improvement. Moreover, Heathfield (n.d.) claimed that providing employees' development and organizational improvements are the main targets of performance appraisal. Thus, not only employees benefit from the performance appraisal, but also companies which, by figuring out employees' areas of improvement, foster the increase of overall performance. These are the reasons why employers use performance appraisal in their organization be it large or small, private or governmental (Locker & Teel, 1988). Thus, only in 1991 the appliance of performance appraisal in businesses and industries reached up to 89% (Murphy & Cleveland, 1991).

The expansion of performance appraisal system was accompanied with a number of researches on this topic. In general performance appraisal was described as a function to identify employees' strength and weaknesses (Ruddin, 2005) as well as to influence on human resources decisions through evaluation, measuring and providing feedback (Cleveland, Murphy & Williams, 1989). At the same time research in Psychology was primarily based on psychometric features (Milkovich & Wigdor, 1991) and emphasized the attention on employees' reaction towards performance appraisal system (Levy & Williams, 2004). Despite of the different approaches their common ground is that the performance appraisal system is one of the most significant functions of HRM (Cardy & Dobbins, 1994) and is a vital element in its effectiveness (Guest, 1997). Performance appraisal allows collecting the information that is vital in decision making over selection and recruitment of new employees, staff development programs, as well as co-worker's motivation (Mathooko, Sitati, & Lillian, 2011).

1.5 Historical Development of Performance Appraisal

For better understanding of the subject it is necessary to come back to the roots of performance appraisal. Thus, according to Goel (2008) the history of performance appraisal begins upon the human civilization and can be qualified as relations between both master and servant or employer and employee. The methods and techniques had been changing throughout the time of the history while the traits were mainly loyalty and fidelity to the employer. Regarding the formal appraisal, it was firstly used in 1883 in USA by the Federal Government (Goel, 2008).

At the same time the origins of performance appraisal, as an evident management procedure, lies in Taylor's "Time and Motion Studies", where the scientific method was used in order to increase employees' productivity. Later, during the period of the First World War Walter Dill Scott of the US Army adopted a new form of appraisal concept, videlicet merit ratings. According to that system the military personnel were evaluated on "man-to-man" basis. Over time that concept switched to business sphere but was mainly designed to hourly workers' evaluation rather than to management processes. During the 1920-1930s in industrial units a rational wage structure was introduced for hourly paid employees. They were compared between each other in a rating process of comparison in order to determinate the individual wage. The main principles of that concept are the following: expected performance resulted in pay rise; and the process had a direct connection to material outcomes. That system was used till 1950s while the question of evaluating of technical people and other professionals rose. Moreover, empirical studies of that time confirmed that beside pay rates moral and self-esteem could also have a major influence on employees' performance. As a result the traditional look on reward outcomes was passed up and general performance appraisal model as it is known today came into existence. It was introduced in 1950s by the "Performance rating Act" that established three rating levels for federal employees: outstanding, satisfactory and dissatisfactory. Later in 1954 the "Incentive rewards Act" authorized honorary recognition and cash payments for greater achievements, inventions, suggestions, etc. by government employees. By 1960s Drucker and McGregor worked out their concepts of MBO and employees' motivation (Murphy & Cleveland, 1995). That significantly influenced the development of performance appraisal, and in 1962 more than 60% of

American companies have already used performance appraisal systems (Spriegel, 1962). Since that time researches continued to develop theories on the impact of performance appraisal methods on overall companies' functionality that mushroomed into a new concept of performance management.

1.6 Performance Appraisal Purpose

According to Cleveland et al. (1989) performance appraisal may serve many purposes for employer, employee and the organization in general. Thus, for the employer it can be a sufficient tool to make decisions concerning promotions, firing, etc. as well as to evaluate employers' target attainments, provide feedback, and communicate with employees. For the employee performance appraisal serves as an instrument for career development and reinforcement. For organizations it simplifies the process of employees' performance assessment as well as group evaluation. At the same time performance appraisal validates organizational methods of staff selection and motivation elements, and evaluates the effectiveness of implemented procedures as trainings, pay raises, promotions, system changes, etc. (Riggio, 2003). Consequently, performance appraisal represents a formalized procedure of employees' monitoring that appears to be an effective management instrument of improving the worker's performance (Brown & Heywood, 2005) and thereby enhancing the overall effectiveness of organizations. McGregor (1960) summarized the uses of performance appraisal into three main functional areas: administrative, informative, and motivational. Administrative area of performance appraisal represents the processes of authority delegation, reward allocation, and facilitation of means distribution. Informative role is shown as provision of sufficient data about employees' strength and weaknesses to the entities' management. Mathis and Jackson (2008) also separate development purpose of performance appraisal. Here emphasis is mostly directed towards employees' development through the training or planning functions. It includes administrative and informative areas of McGregor's concept and can be fully covered by them. Finally, motivational function may help to establish learning environment that motivates employees and directs them to performance improvement.

At the same time Lussier and Hendon (2013) distinguish the major purpose of performance appraisal, which is communication. Through the two-way interactions with the managers, subordinates deepen up their understanding of requirements and tools of measurement. Moreover, communication creates an essential ground of trust for the employees' expression of troubles, training needs, ideas, and observations. That is really useful because management cannot always know the concerns of subordinates, while communication allows remedying the majority of performance problems and overcoming the obstacles. Moreover, it is also a good path to enhance relationship between appraisers and appraises. Thus, communication can be considered to be a critical component of performance appraisal purpose.

1.7 Performance Appraisal Process

According to Deb (2006) there is no single appraisal process that can be the same for any chosen organization because of its variability due to environmental, cultural, and organizational aspects. At the same time any performance appraisal process should be defined, monitored, and supported by the organization (Anthony, Perrewe, & Kacmar, 1996). Moreover, it should be oriented towards accomplishment of organizational targets.

There are many constituents of performance appraisal process which are quite variable as well. Thus, Faseeh (2013) defines five elements of performance appraisal: identification of strategic performance criteria; development of appraisal methods; multisource collection of information on employees' performance appraisal; conduction of an interview; and evaluation of the appraisal process. Each step of the process is quite important and failure in considering one or more steps may result in decreasing of appraisal system efficiency (Leap & Crino, 1990).

Identification of performance criteria is the starting point of performance appraisal process. At this stage key performance elements (or the judgment standards) as well as organizational and personal goals in conjunction with job expectations are drawn up (Kleynhans, Markham, Meyer, & Aswegen, 2007). Mondy (2012) defines traits, behaviors, improvement potential, competencies and goal achievement among the most common performance appraisal characteristics. They should be clear, measurable, and understandable for both employees and employers. When performance criteria are

established, decisions regarding the methods that will be used in the process should be made. According to Lussier and Hendon (2013) to be accurate these methods should meet the requirements of validity, reliability, acceptability, and feasibility. They also should be specific and rest upon organization's mission and targets. Once they are developed, it is a company's obligation to pinpoint appraises and appraisers, and communicate established methods and performance standards. At the next step of performance appraisal process all the data regarding employee's performance is gathered. Here appraisers measure actual performance and compare it with worked out standards. Aswathappa (2005) mentions that despite of the common criteria of evaluation assessment should also include individual's potential to perform. When all the data is collected and actual performance is compared with established standards, the appraiser conducts an interview with an employee in order to discuss the performance, determine strengths and weaknesses, and work out goals for the next evaluation period (Kleynhans et al., 2007). Here feedback plays an essential role in influencing employees' motivation. The final stage is the performance appraisal process' evaluation where the corrective actions are taken to decrease negative elements of performance appraisal process (if they were found). At the same time at this point decisions concerning rewards, promotions, transfers, etc. are taken.

It is worth noting that organizations should make allowance for some factors while creating, implementing, and conducting performance appraisal. Thus, Kleynhans et al. (2007) emphasize their attention on the methods, procedures, and fairness, while Lussier and Hendon (2013) on accuracy of performance appraisal. The choice of method according to Kleynhans et al. (2007) is as significant as the content and the process of appraisal conduction, and stands in the same range with fairness in importance. What concerns accuracy, Lussier and Hendon (2013) claim that accurately measured performance can lead employees towards the improvement and act as a motivator factor. Thus, employees' dissatisfaction with fairness (revealed through managers' lack of thoroughness or preconceived behavior) may result in significant reduction of positive attitude towards the process itself. Disagreement on the chosen method may make employees to take legal action against the organization; while inaccurate appraisal may

lead to the reduction of morale, lower productivity, and negative impact on overall motivation (Kleynhans et al., 2007).

Consequently, in performance appraisal process despite of importance of every single step accomplishment, the choice of the method as well as the fairness and accuracy of the whole process also cut a great figure. Moreover, other elements of the process as feedback, goals-setting, self-evaluation, etc. (which can be defined as main performance appraisal characteristics) are also worth noticing.

1.8 Performance Appraisal Methods

Performance appraisal system plays an important role in organizations being an indicator of the quality in HRM processes. Moreover, according to Blstakova (2010) accurately designed and implemented performance appraisal process is both helpful and necessary in performance management and important in terms of collection of information for human resources functions. In this case performance appraisal methods serve as a tool in measuring of employees' performance. There are many different performance appraisal methods or techniques that can be used in employees' performance evaluation and in general the choice of the method depends on the size and the nature of the organization. These methods clarify the managers' attempts to establish performance standards and develop ways and means to measure and evaluate employees' performance (Aquinas, 2009). It should be mentioned that every method has its own drawbacks and merits.

There are many different classifications of performance appraisal methods. Thus, Decenzo and Robbins (1998) evolve three approaches to measure performance appraisal: absolute standards (where the evaluation is based on a comparison of employee's performance to a definite standard and it is independent from other workers), relative standards (where employees are compared against other workers), and MBO (where employees are evaluated according to the level of accomplishment of the set goals). There is also a broader classification of performance appraisal methods which divides them into traditional and modern (Figure 1.15) (Goel, 2008).

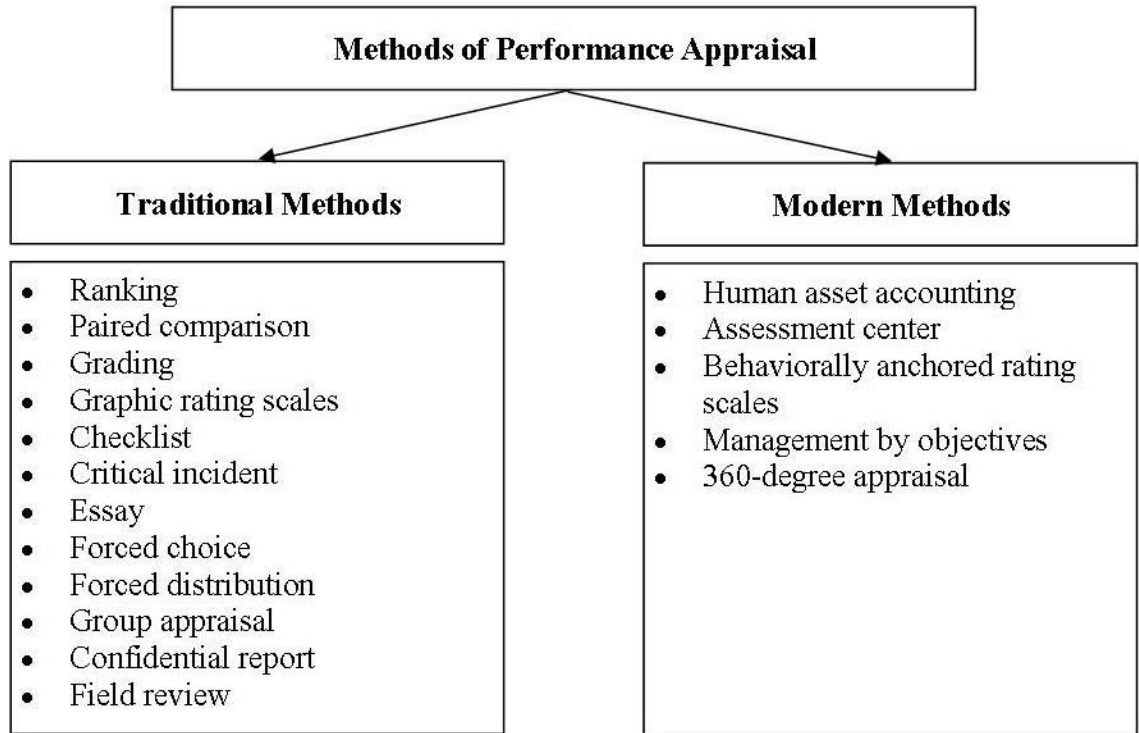


Figure 1.15. Classification of performance appraisal methods. Adapted from “Strategic Approach to Human Resources Management: Concept, Tools, and Applications,” by T. Deb, 2006, p. 208.

1.8.1 Traditional methods. Traditional methods are relatively older methods of performance appraisal and there is no available authentic data that all of these practices are still used in organizations (Goel, 2008). These methods are mainly based on personal qualities as judgment, attitude, leadership, loyalty, knowledge, etc. It is important to study traditional methods because their application adds meaning to the performance appraisal concept. Traditional methods include: ranking, paired comparison, grading, graphic rating scales, checklist, critical incident, essay, forced choice, forced distribution, group appraisal, confidential report, and field review.

Ranking method. This method implies that an employee is ranked in comparison with others on the basis of certain characteristics and traits from best to worst (Deb, 2006). Ranking method differs by the fact that it is both simple and inexpensive. At the same time its validity and reliability is opened to questions.

Paired comparison method. This method can be considered as an improvement over ranking method. Each employee is compared with other workers, but taking only

one at a time and in general only on one trait. Thus, the rater assigns ranks to employees and compares them to decide who performs best. The number of comparisons can be calculated through the formulae $N*(N-1)/2$, what shows the increase in calculations together with the growth of number of employees (Khurana, Khurana, & Sharma, 2010). That demonstrates the time consumption characteristics of this method. Among other drawbacks of paired comparison is inability to access employees' improvements over the period of time as well as assignment of employees based on performance rather than on the presence of desired features.

Grading method. Under this method rater determines certain attributes to be appraised (as leadership, power, communication, job knowledge, ability to learn, quality of work, etc.) and assigns grades to employees (Bhattacharyya, 2011). The grades are generally assigned on the basis of presence or absence of the evaluated attributes. It is usually five grades (A-E) that can be allotted to employees where A-excellent, B-very good, C-good, D-average, and E-below average (Khurana et al., 2010).

Graphic rating scales method. It is considered to be the most common and widely used method of performance appraisal (Bhattacharyya, 2011). Under graphic rating scales different employees' qualities and characteristics (as leadership, job knowledge, quality and quantity of work, initiative capability etc.) are evaluated on the basis of different rating scales. The rater has a form for every employee with the help of which he/she compares the presence of various features on the scales and assigns the overall score (Deb, 2006). Rating scales can be divided into continuous (the score is assigned as 0, 1, 2, 3, 4, and 5, or anything like that) and discontinuous (the score is assigned to each point on the scale, which can be 3, 5, or 7-points). The advantages of this method are its simplicity and easiness in understanding. At the same time it enables quantification of performance scores and a subsequent statistical analysis (Bhattacharyya, 2011). Moreover, it allows comparing employees of the same group. However, the appraisal scores can be interpreted differently by various raters, what raises the point of its reliability and validity.

Checklist method. Under this method the rater doesn't evaluate the performance of employee but rather have a list of statements describing worker's performance. This checklist of pre-scaled description of behavior is used to determine employees'

performance (Monga, 1983). Statements are evaluated by indicating whether individual's behavior is positive or negative in each of them, or if he/she has the required characteristics. The overall performance is rated on the basis of averaging the scale of values. It should be mentioned that there is a difficulty in assembling and analyzing of a great amount of statements in this method which is also not free from bias.

Critical incident method. Under this method the rater records all the certain events or "critical elements" (actions below or above the requirements of the job) of employees' performance or behavior concerning both positive and negative features on a regular basis in a special notebook. Then this behavior is discussed with employees, putting a special emphasis on regular behavior rather than on traits (Bhattacharyya, 2011). Finally, group of experts evaluates those critical elements in terms of its importance for the job. The drawback of this method is continuance of critical elements recording which may cause resent towards the rater. At the same time the absence of critical elements may result in employees' evaluation failure. Delay of feedback is also a significant limitation.

Essay method. Under this method the rater evaluates the employee performance in terms of certain factors (strengths and weaknesses, development needs, overall performance, promotions, etc.) in his/her own words by giving specific examples of employee behavior (Khurana et al., 2010). There is no quantitative appraisal in essay method. Among other limitations is the dependence of evaluation on writing and analytical skills of the rater as well as on his/her memory. Thus, the overall results of appraisal will depend on rater but not on employee's performance.

Forced choice method. Under this method a series of group of statements (both positive and negative) are given to rater to point out the pertinence of these assertions as goals in description of employees whose performance is evaluated (Aquinas, 2009). There is no discussion in the forced choice method, but only the rater's choice between the best and worst fit statements. The overall score is assigned to each statement but the rater does not know it, what allowing excluding bias and comparing the performance standards. At the same time this method is really complex and set out many issues in framing statements.

Forced distribution method. This method is based on predetermined distribution scale (which is presented as a form of comparative employees' evaluation) where

individuals are rated according to a specific dispersal (Bhattacharyya, 2011). Forced distribution is generally applied to many components of job performance with variable proportions of distribution. Thus, instead of percentage ratings employees are commonly evaluated by including them in predefined categories, such as top, middle, and bottom levels. Among the limitations of this method appearance of rating errors due to central tendency and leniency should be mentioned. Ranking errors may result in discriminatory evaluation of employees, especially those with similar performance.

Group appraisal method. Under this method an employee is evaluated by a group of raters. The group normally consists of the immediate individual's supervisors and other managers that are related to the worker job performance. They set the definite standards, evaluate the employee's performance using different techniques and finally compare performance with the standards, find out deviations and analyze it (Giri, 2008). Despite of the simplicity of the group appraisal the presence of big amount of raters increases pointlessly time consumption and decision making process.

Confidential report method. Under this method the rater evaluates employee's performance based on his/her observations, intuitions and judgments and reports it confidentially (Deb, 2006). The content of reports includes individuals' strengths and weaknesses, behavior, commitment, job performance, etc. The drawbacks of this method are the presence of prejudice and bias as well as employee's incapability to see and discuss the report.

Field review method. Under this method an employee is generally rated not by his/her direct supervisor, but rather by the representative of human resources department. The main idea of field review is employee's evaluation on the score of available quantitative information (records, notes, supervisor's mentions, etc.) by the third person that is unbiased in the judgments (Aquinas, 2009). That makes field review more reliable and valid, but at the same time more time consuming. Limitations of field review are relevant incapability of fair and objective employee's evaluation by the third party as well as business of key managerial personnel.

1.8.2 Modern methods. Traditional methods of performance appraisal in general have a lot of limitations (as biasness, subjectivity, prejudice, leniency, etc.) because of

their evident emphasis on evaluation of employees' performance or task, envisaging it as isolated issue. To avoid such a narrow and partial approach, performance appraisal modern methods were developed and widely practiced by organizations. When compared to traditional methods, they are both less structured and draw less attention towards ratings and rankings, but, at the same time, they are more oriented towards employees' development (Bladen, 2001). Modern methods of performance appraisal include: human asset accounting, assessment center, behaviorally anchored rating scales (BARS), MBO, and 360-degree appraisal.

Human asset accounting method. Human resources are a valuable asset of any organization. Thus, under this method human resources are measured in terms of money. It can be explained by the tendency that when competent, experienced, and trained employees join organization the human asset increases and vice versa. Consequently, in human asset accounting method employee's performance is evaluated as the difference between individual's cost and contribution. Cost in this case includes expenses for planning, recruitment, selection, development, training, salaries, etc., while contribution is measured as employee's job productivity and value added services (Aquinas, 2009). It should be mentioned that in order to estimate the human asset accounting many of intervening organizational variables (as policies, strategies, motivational level, communicational system, etc.) must be evaluated over a long period of time. However, this method is not really useful in measuring of employee's performance and it is still in transitional stage.

Assessment center method. This method is not a technique of performance appraisal itself, but rather a system of combined methods. The main idea of assessment center is to test employees in a social environment by a number of raters using different criteria as interviews, business games, role plays, paper-pencil tests, etc. (Bhattacharyya, 2011). The raters are chosen from experienced managers of different levels. Under this method employees' performance is evaluated both individually and in group. According to Thornton (1980) assessment centers are mainly used for selection and staff development. It generally evaluates individual's performance behavior related to the same performance dimensions. Assessment centers are useful in evaluating employees' work motivation, interpersonal skills, resistance to stress, etc. At the same time it has

more reliability and validity. Thus, Sackett (1987) confirmed the existence of content, construct, and criterion-related validity by many studies. Among the drawbacks of this method are its costly characteristics, necessity of constant experts' presence to carry out the processes, and its suitability just for senior and middle level management.

Behavior anchored rating scale. BARS is another modern method of performance appraisal that combines characteristics of both rating scale and critical incidents methods. It is mainly used to identify critical areas of employees' performance that are related to their work, and to outline more and less effective behavior to get the expected results (Khurana et al., 2010). Consequently, in BARS system raters define the employees' desired and effective behavior, and then compare the actual individual's behavior and performance with pre-decided. It should be mentioned that BARS may be created for different job dimensions. In view of its behavior orientation BARS is considered to be one of the most useful techniques of performance appraisal (Bhattacharyya, 2011). Moreover, in this system rater and employee may participate in developing and establishing of each performance area standards. Despite of its reliability and validity, together with its consideration to observable and measurable behavior BARS has its own drawbacks. Thus, it is time-consuming, painstaking, and more behavior than result oriented.

Management by objectives. This comprehensive management approach is adopted for both organizational development and performance appraisal. In MBO organizational goals are aligned with employees' objectives what increases overall performance. Under this method raters and employees organize meetings where they define, establish, and set goals and objectives, together with ways and methods of performance measurement, for individuals to achieve within a prescribed period of time (usually it is half-year or one year). The set goals are mainly job and career oriented and assimilated with organizational targets (Drucker, 1954). MBO also foresees the presence of superior-subordinate interactions and supervisors that support and periodically provide with feedbacks. Under this method the real outcomes of employees are judged, but not their potential to success or subjective opinion of their abilities (Bhattacharyya, 2011). At the same time it is also impossible to divide the components of overall employee's appraisal, where an individual is rather evaluated in terms of target achievement. Thus, despite of

many advantages of this method as the sense of autonomy, achievement, possibilities for personal development, increased competence, etc., MBO often leads to unrealistic expectations of management. There is also difficulty in setting of intangible goals as moral, interpersonal skills, loyalty, etc. Moreover, MBO has a huge emphasis on target achievement, but not on the quality of the job.

360-degree appraisal method. This appraisal method is largely used nowadays. It requires performance feedbacks from internal resources (managers, subordinates, and peers), self-assessment, and external resources (customers, suppliers, or other interested stakeholders). The results of 360-degree appraisal are mostly used for employees' development and training plans as well as for their promotional and pay decisions. It should be mentioned that 360-degree appraisal ensures total employee involvement and empowerment what reduces the possibility of error due to the limitation of subjectivity in evaluation system (Bhattacharyya, 2011). At the same time this method is really sensitive to organizational cultures and open for political games in companies. Moreover, according to Sharma (2004) 360-degree appraisal don't substitute for performance appraisal and should be used just as developmental tool.

Thus, performance appraisal methods are one of the main tools of organizations in terms of employees' evaluation. They can be used individually and combined. The choice of the method depends on the size and nature of companies. Depending on how performance appraisal is conducted, employees may be motivated or demotivated to increase their productivity, achieve set goals, stay within deadlines, etc. Motivational status influence on overall level of performance as well. In this case both correct choice of appraisal method and well-administrated performance appraisal process are essential for organizations. Moreover, methods and system itself have their own drawbacks and limitations that should be discussed more thoroughly.

1.9 Performance Appraisal Criticism

Performance appraisal systems are widely distributed nowadays among many organizations and broadly adopted for different types of employees, though they are not free of criticism that keeps increasing. Thus, according to Beach (2005) the prevailing critique of performance appraisal systems is focused on management usage of appraisals

in order to rectify the individuals' weaknesses rather than on improvements in employees' performance. This contradicts the purpose of performance appraisal, what came through the studies of Pareek and Rao (2006) where the main idea of appraisal was defined as supporting of individuals in the process of bridging their weaknesses over and assistance in employees' identification with the purposes of training, development, and motivation. That contradiction resulted in significant divergence between rewards allocation based on evaluated performance and past performance itself. Newton and Findley (1996) claim that occurred discrepancy leads employees' up to unwillingness to reveal their drawbacks, concerns, and undesirable working moments in order to diminish the negative consequences of possible promotions, pay increases, awards, etc. There is also another conflict: managers appraising the employees have to fulfill multiple functions and play different roles. Thus, they need to monitor and judge performance, as well as to be the counselors in performance appraisal process (Randell, 1994). According to McGregor (1957) this multi-roles behavior leads to managers' reluctance towards negative assertions and remarks on employees' performance because it may result in management criticism (deficiency of support, lack of contribution to individuals' development, employees' demotivation, etc.). Conspicuously, managers' appraisal is oftentimes subjectively biased. Thomas and Bretz (1994) explain it by rater's feeling of "fear and loathing", which can be caused by both absence of fair rewards for well-conducted appraisals and managers' incapability to fully control the situation. Longenecker, Sims, and Gioia (1987), conversely, emphasize their attention on appraisers' motivational and cognitive states. One way or another, usage of dissimilar standards by raters in regard to different appraises leads towards invalid, precarious, and incompatible appraisal (Folger, Konovsky, & Cropanzano, 1992).

Among other problems that appear during the performance appraisal process it is necessary to point out unclear standards, central tendency, recency effect, halo and horn effects, biases, strictness and leniency (Dessler, 1997). Unclear standards are too open for interpretation of the appraisal scale, creating a misunderstanding between raters during the evaluation process. That can be explained by differences in comprehension of "good" and "bad" performance (for example) by various people. Moreover, such a vast openness of traits and degrees of merit to exegesis leads to unfairness in appraisal. Central

tendency is appraisers' predisposition to rate all employees the same way in the average rating points. It is mostly used by raters to avoid conflicts, but it distorts the appraisal and makes it less useful in terms of counseling purposes, rewards allocation, and promotions (Dessler, 1997). It should be mentioned that organizations implement politics to impact these rating systems. Thus, Longenecker and Ludwig (1990) emphasize their attention on the usage of organizational politics in both deliberation of employees' efforts to derive benefits and reduction of raters' decision affection by feasible sources of inaccuracy and bias. Another problem of performance appraisal is "recency effect". It appears when raters are gathering information for employees' evaluation over the whole appraisal period, but just recent events impact on overall appraisal decision. Halo and horn effects emerge when raters over-rating or under-rating employees respectively rather than to be critical in their judgments and measures. It happens because of the presence of biases in appraisers' ratings, where employees are rather judged by one trait than in an integrated manner (Dessler, 1997). Another important issue in performance appraisal is biases. They can be different: ethnicity, sex, gender, age, physical appearance, personal likes and dislikes, etc. (Cook, 1995). Finally, leniency and strictness occur when raters have a tendency to evaluate employees rather high or low respectively.

Despite of all the criticism of performance appraisal it is still one of the most powerful tools of employees' performance evaluation. Moreover, Potgieter (2002) confirms the presence of performance appraisal or review systems in most organizations and explains its relative inefficiency by both absences of professionals to conduct these systems and poor equipment of organizations to run the processes. At the same time such a big amount of problems puts to the fore the question of accuracy and fairness in performance appraisal process as they mostly influence employees' emotions and perceptions. Moreover, according to Levy and Williams (2004) individual's perceptions are the elements of effectiveness determination of performance appraisal.

1.10 Performance Appraisal and Motivation

If we look at the integrative model of motivation (Figure 1.14) we can see that there are many elements impacting the overall employees' motivation. At the same time these elements influence the performance appraisal system as well. Moreover, the

conceptual framework of that system consists of the motivational theories that are formed by the components of integrative model. Thus, if the full integrative model of motivation shows the process of individuals' need satisfaction from ever since the need is established, we would pay attention to the elements having direct impact on satisfaction of those desires and result in motivational effect (Figure 1.16).

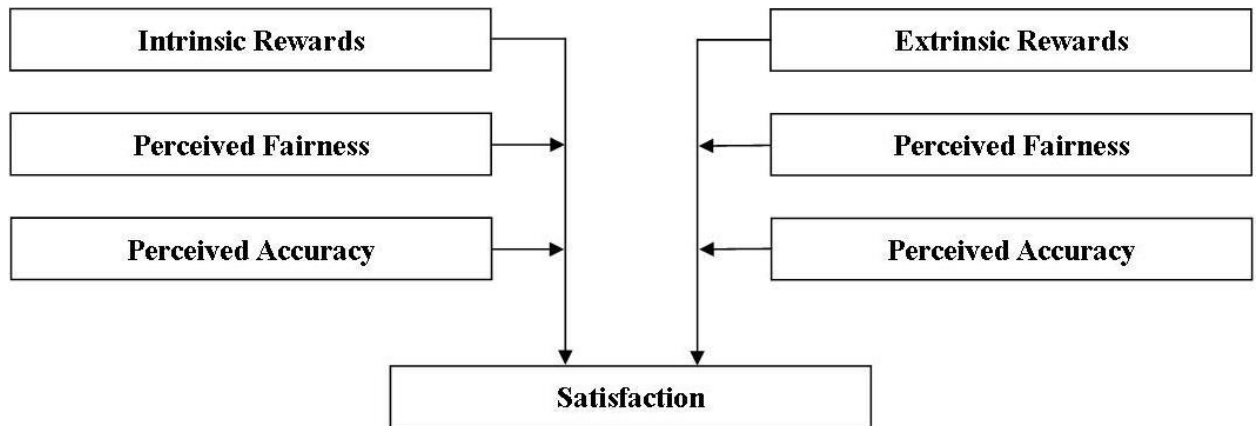


Figure 1.16. Main motivational factors of Integrative Motivation Model.

Conspicuously, there are five elements that should be noted and discussed more thoroughly: perceived fairness, perceived accuracy, satisfaction, extrinsic rewards, and intrinsic awards. From the motivational point of view these components reply for individuals' perception of the whole process and serve as the main motivating factors.

As it has been already told the theoretical bases of performance appraisal system consists of the same theories that are included in integrative model of motivation. Thus, Garg (2014) defines equity, expectancy, and goal-setting theories as the conceptual framework for performance appraisal. It is worthy of note that a due attention should be also given to need-based and reinforcement theories as well as to intrinsic and extrinsic rewards. Theoretical basis of equity theory in performance appraisal is mainly represented by perceived fairness. There are many researches in this behalf. Thus, Cropanzano, Rupp, Mohler, and Schminke (2001) state that fairness in employees' evaluation appears for motivational foundation of individuals' performance improvement; Cowandy (2014) claims that fair performance appraisal is the way to fully realize that workers are satisfied and motivated; finally Hyde (2005) asserts that the

presence of transparency in the evaluation as well as fairness in promotions, reward allocations, pay raises, and other components that are determined by performance appraisal system motivate employees. Moreover, McFarlin and Sweeny (1992) confirmed the interrelatedness between performance appraisal system fairness and its influence on overall satisfaction. Thus, perceived fairness can be included in theoretical model as the component that has a significant impact on employees' motivation from a perspective of performance appraisal process.

Expectancy theory in performance appraisal casts in the form of perceived accuracy. Vikesland (n.d.) claims that accuracy is the key determinant of employees' motivation, while Roberson and Stewart (2006) dramatized the importance of this perceived reaction because of its capability to impact employees' attitudes to performance improvements. Consequently, perceived accuracy can be added to the theoretical model.

Theoretical framework of goal-setting theory is represented in performance appraisal by established goals and provided feedbacks. These are mainly elements of the system, otherwise speaking performance appraisal characteristics. Thus, Armstrong (2006) asserts that existence of agreed and set goals together with timely, noticeable, and impersonal feedback significantly impacts individuals' motivation and results in performance improvements. Moreover, Kinicki, Prussia, Bin, and McKee-Ryan (2004) tend an issue of feedback richness as the element that impacts performance appraisal environment. Adequate consideration should be also given to other performance characteristics because they can bring positive workers' reactions of performance appraisal to the light, what in its turn leads to increased employees' motivation. DeNisi and Pritchard (2006) point out appraisal purpose and appraisal source among performance appraisal characteristics that can prominently motivate employees to enhance their performance. According to DeLeon and Ewen (1997) employees can be evaluated by one or more sources as self, rater, manager, peer, subordinate, and customer. What concerns appraisal purpose, McGregor (1960) emphasizes his attention on administrative, informative, and motivational purposes. At the same time performance appraisal methods as one of the main components in terms of individuals' evaluation go a

long way towards overall motivation. Thus, the next element of theoretical model relies on appraisal characteristics that are goals, feedback, purpose, source, and methods.

A special attention should be given to appraisal satisfaction as it is positively interrelated with work performance (Roberts & Reed, 1996). Cowandy (2014) claims, that it represents employees' attitudes towards the on-going performance appraisal process. Moreover, Giles and Mossholder (1990) consider appraisal satisfaction as one of the most important and consequential factors which measure individuals' reactions to appraisal system. In this case appraisal satisfaction can be added to theoretical model.

Finally the conceptual framework of intrinsic and extrinsic rewards with a definite part of reinforcement theory constitutes the performance appraisal system itself. Thus, Herzberg (1968) focused his attention on the usage of rewards allocation and recognition with the purpose of employees' motivation through performance appraisal. Moreover, it was supported by Deci (1972) in his assertion that extrinsic rewards are more useful in behavior promotion than intrinsic ones, while Herzberg (1968) claimed that extrinsic rewards can significantly increase individuals' performance. At the same time performance appraisal system allows taking into account both of them. Thus, performance appraisal system reflects the clever allocation of intrinsic and extrinsic rewards through the usage of appraisal characteristics with a definite attention towards fairness, accuracy, and satisfaction. All of that can be depicted in the theoretical model (Figure 1.17).

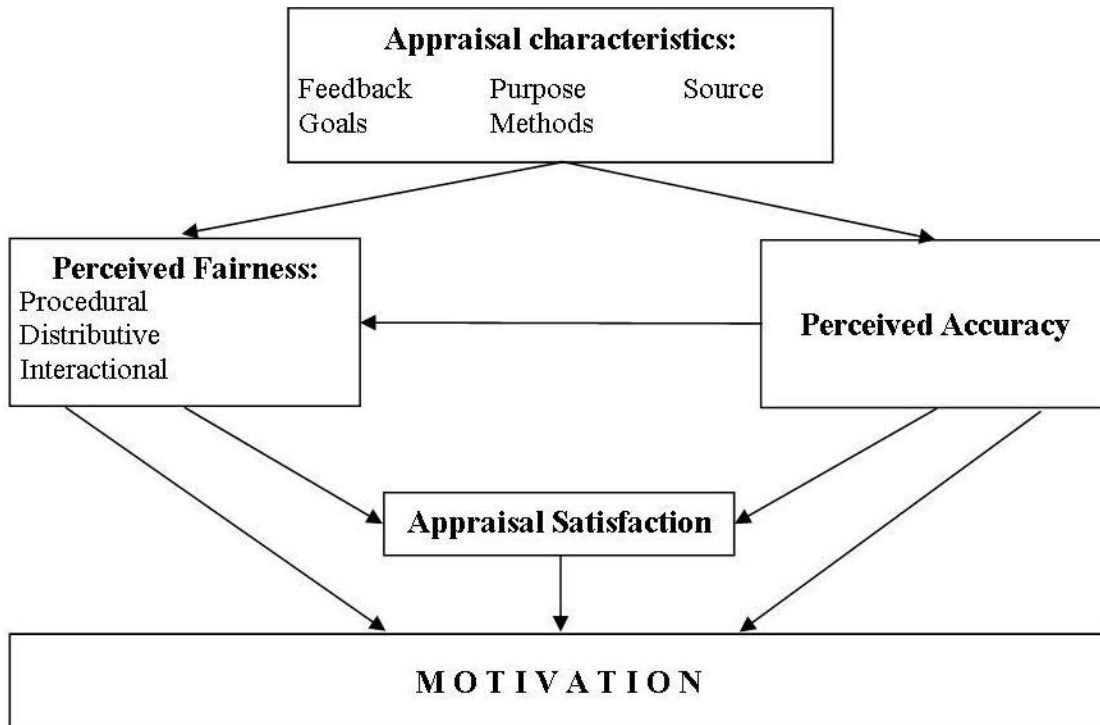


Figure 1.17. Theoretical model of performance appraisal impact on employees' motivation.

The model shows that there are three elements that have direct impact on overall motivation, which are perceived fairness, perceived accuracy and appraisal satisfaction, though they should be discussed more thoroughly. What concerns appraisal characteristics, due to their extensiveness, extensionality, and indirect effect on motivation it is suggested to study their direct influence on perceived fairness and perceived accuracy and indirect impact on appraisal satisfaction and employees' motivation in a separate research.

1.10.1 Perceived fairness. Among all the criteria that impact both the results of performance evaluation and employees' motivation, individuals' perception of appraisal fairness is considered to be one of the most significant figures of merit. Thus, according to Taylor et al. (1995) fair raters' appraisal leads to employees' confidence in validity, usefulness, and absence of bias. Moreover, Nathan, Mohrman, and Milliman (1991) considered perceived fairness as one of the main measurements of performance appraisal effectiveness that is broadly connected with evaluation consequents. Previous researches

concerning fairness, including studies of Sheppard et al. (1992), pointed out three main parts or dimensions of perceived fairness videlicet distributive, procedural, and interactional.

According to Greenberg (1986) distributive fairness is responsible for fair distribution of outcomes. Thus, in performance appraisal framework, distributive fairness represents individuals' opinion replying for fair disposal of performance appraisal results and its reflection towards the fulfilled tasks or completed work. In other words, it is employees' judgment of rewards allocation in relation to the while.

Procedural fairness, according to Folger et al. (1992) focuses on fairness of appraisal procedures that are used in the process of employees' evaluation. Simply put, it is individual's perception on performance appraisal conduction and how fair it is. Moreover, Colquitt et al. (2001) also define other areas that are measured by procedural fairness in terms of performance appraisal as bias, ethic, individuals' capabilities to convey their thoughts during the evaluation process, and their ability to impact on the outcomes of appraisal.

Finally, the concept of interactional fairness can be defined as the level and quality of interactions and interpersonal communications between employee and rater during the performance appraisal period (Bies, 2001). Here personal communications, assistance, supportiveness, and other similar criteria come to the fore. Moreover, Colquitt et al. (2001) give heed to the way of employees' treatment during the appraisal process as to the one of the main measurement elements of interactional fairness.

Thus, fairness of performance appraisal process and its outcomes directly influence employees' motivation. It has been confirmed by researches of Weiss et al. (1999), Cropanzano et al. (2003), and others.

As fair treatment relates to the fundamental needs, according to Deci and Ryan's (2000) self-determination theory, satisfaction of that need leads to increased individuals' motivation. Moreover, Colquitt et al. (2001) claim that meta-analysis confirms the interrelations between perceived fairness and satisfaction, what is accounted for the components of performance appraisal system. In this case the following hypotheses can be offered:

- *Hypothesis 1a:* There is a significant positive impact of distributive fairness on employees' motivation.
- *Hypothesis 1b:* There is a significant positive impact of procedural fairness on employees' motivation.
- *Hypothesis 1c:* There is a significant positive impact of interactional fairness on employees' motivation.
- *Hypothesis 2a:* Distributive fairness has a positive impact on appraisal satisfaction.
- *Hypothesis 2b:* Procedural fairness has a positive impact on appraisal satisfaction.
- *Hypothesis 2c:* Interactional fairness has a positive impact on appraisal satisfaction.

1.10.2 Perceived accuracy. Cardy and Dobbins (1994) state that perceived accuracy is extensively applied in different researches that are connected with performance appraisal effectiveness. Moreover, it is one of the most widely and frequently used criteria of individuals' acceptance of appraisal system (Lam & Schaubroeck, 1999). Accurate evaluation stimulates employees to accept appraisal system as a valid indicator of their performance what leads to increased participation in appraisal process and motivational accretion. Thus, Vest et al. (1995) claimed the presence of strong correlation between perceived accuracy and employees' motivation in functioning appraisal systems.

At the same time inaccuracy during the evaluation process may lead to creation of "toxic" environment, violation of trust, deterioration of individuals' relations, and eventually employees' demotivation (Vikesland, n.d.). It also creates individuals' perception of unfair evaluation while accurate usage of standards and processes results in employees' perception of organizational fairness (Roberson & Stewart, 2006; Tyler & Blader, 2000).

Due cognizance should be given to the impact of accuracy on the perception of fairness. Narcisse and Harcourt (2008) in their qualitative study confirmed its influence on distributive justice; Taylor et al. (1995) showed its interrelations with procedural

justice, while Roberson and Stewart (2006) emphasized their attention on its effect towards the interactional fairness.

Colquitt et al. (2001) in their turn, indicated the relations between perceived accuracy and satisfaction. Thus, during the evaluation process it creates a trust-based attitude towards appraisal process from the individuals' perspective, what leads to more positive employees' perception and results in increased satisfaction with the system (Tziner, Murphy, & Cleveland, 2002). Therefore the following hypotheses can be suggested:

- **Hypothesis 3a:** Perceived accuracy positively affects distributive fairness.
- **Hypothesis 3b:** Perceived accuracy positively affects procedural fairness.
- **Hypothesis 3c:** Perceived accuracy positively affects interactional fairness.
- **Hypothesis 4:** Perceived accuracy has a positive impact on appraisal satisfaction.
- **Hypothesis 5:** There is a significant positive impact of perceived accuracy on employees' motivation.

1.10.3 Appraisal satisfaction. Appraisal satisfaction can be defined as employees' attitude towards the implemented performance appraisal system, otherwise speaking it is the measurement of employees' reaction (satisfaction) in regard to their evaluation (Giles & Mossholder, 1990). Consequently, appraisal satisfaction measures employees' perception and satisfaction of performance appraisal system.

According to Pearce and Porter (1986) there is a gap in apprehension of appraisal satisfaction between the raters who administer the appraisal system and employees who receive their feedbacks. In this case managers are more influenced by the system. Thus, their satisfaction or dissatisfaction with the system may significantly impact the overall attitude towards the appraisal feedback while ratees' perception is much smoother. Keeping and Levy (2000) distinguish three main elements of appraisal system through which satisfaction can be detected; they are process, outcome, and interview. The correlation between appraisal satisfaction and the process was studied in the work of Landy, Barnes, and Murphy (1978); Dipboye and Pontbriand (1981) in their research showed the interrelation between appraisal process and the interview; finally, Russell and Goode (1988) confirmed the connection of outcomes (improvement value) with overall

appraisal satisfaction. Through the combination of these components employees' satisfaction can be determined.

Ilgen, Petersen, Martin, and Boeschen (1981) emphasize their attention on the appraisal process as the key element in establishment of employees' appraisal satisfaction. Moreover, they define the main variables of appraisal satisfaction that influence the overall motivation, that are managers' interactions with ratees and raters' satisfaction (which in its turn includes guidance, feedback, and subordinates' support). By affecting these components of appraisal satisfaction employees' motivation can be increased (Joblin, 1979).

Moreover, individuals' appraisal satisfaction as a significant motivator was studied in the work of DeNisi and Pritchard (2006). They confirmed that workers' satisfaction with appraisal system may result in improvement of their performance. Further still, Lee and Bruvold (2003) determined that increased employees' motivation induced by appraisal satisfaction can be imaged in higher organizational commitment. Thus, the following hypothesis can be offered:

- ***Hypothesis 6:*** There is a significant positive impact of appraisal satisfaction on employees' motivation.

All the above mentioned hypotheses can be divided into three groups according to the final impact of the elements of the model; they are employees' motivation, appraisal satisfaction, and perceived fairness (Table 1.3).

Table 1.3

Suggested Hypotheses

Employees' motivation	Appraisal satisfaction	Perceived fairness
<i>Hypothesis 1a:</i> There is a significant positive impact of distributive fairness on employees' motivation.	<i>Hypothesis 2a:</i> Distributive fairness has a positive impact on appraisal satisfaction.	<i>Hypothesis 3a:</i> Perceived accuracy positively affects distributive fairness.
<i>Hypothesis 1b:</i> There is a significant positive impact of procedural fairness on employees' motivation.	<i>Hypothesis 2b:</i> Procedural fairness has a positive impact on appraisal satisfaction.	<i>Hypothesis 3b:</i> Perceived accuracy positively affects procedural fairness.
<i>Hypothesis 1c:</i> There is a significant positive impact of interactional fairness on employees' motivation.	<i>Hypothesis 2c:</i> Interactional fairness has a positive impact on appraisal satisfaction.	<i>Hypothesis 3c:</i> Perceived accuracy positively affects interactional fairness.
<i>Hypothesis 5:</i> There is a significant positive impact of perceived accuracy on employees' motivation.	<i>Hypothesis 4:</i> Perceived accuracy has a positive impact on appraisal satisfaction.	
<i>Hypothesis 6:</i> There is a significant positive impact of appraisal satisfaction on employees' motivation.		

1.11 Summary

Summarizing the literature review, motivation and performance appraisal are significantly interrelated what appears in many constituents. Thus, if motivation itself according to Kreitner (1995) can be presented as “the drive of the people’s psychological state that moves their behavior and direction”, performance appraisal, in its turn, serves

as the tool of addressing those behaviors in a desired way. Being such an instrument, performance appraisal allows impacting employees' motivation to various extents.

Employees' motivation in this case is studied and represented through the theories of motivation that can be divided into two broad categories: those that are mostly directed towards formation of individuals' desires or efforts to satisfy particular established tension and those that have direct impact on employees' need satisfaction. The first category is represented by need-based, reinforcement, and goal-setting theories with some features of expectancy and equity theories. Elements of these theories take a back-scratcher in performance appraisal as they mainly form the desires, drives, or specific behavior that leads to the effort but not directly to satisfaction of raised needs. Theories of the second group (extrinsic, intrinsic, equity, and expectancy) are more useful since the needs' satisfaction depends on the level of their execution.

With an eye on comprehension of employees' motivation "Integrative Motivation Model" (Figure 1.14) is proposed. It consists of the theories of both groups and shows the influence of all the elements on overall motivation. Since there are factors that may not been articulated either systematically or regularly and they mingle to the application of motivation theories (Mitchel, 1982), using of integrative model is much more beneficial than each several theory because it allows representing the process of individuals' need satisfaction from ever since the need is established making allowance for impact of primary and secondary factors. Moreover, building the suggested model highlighted the most significant characteristics that influence overall employees' motivation, which are rewards allocation, perceived fairness, and perceived accuracy.

What concerns performance appraisal system, it serves as an integration tool of elements of employees' motivation. Its motivational aspect is represented in "Theoretical model of performance appraisal impact on employees' motivation" (Figure 1.17). Thus, if the full integrative model of motivation shows the process of individuals' need satisfaction from ever since the need is established, in theoretical model more attention is paid to the constituents that have direct impact on satisfaction of those desires (theories of the second category) and result in motivational effect. These elements recapitulate the main components of "Integrative Motivation Model" (Figure 1.16) and include perceived fairness, perceived accuracy, extrinsic and intrinsic awards (rewards allocation), and

appraisal satisfaction. Here perceived fairness represents the theoretical basis of equity theory while perceived accuracy is an essential part of expectancy theory. Extrinsic and intrinsic rewards in their turn constitute the performance appraisal system itself. A special attention is given to appraisal satisfaction as one of the most important and consequential factors which measure individuals' reactions to appraisal system. The interrelation of the components and their impact on overall employees' motivation was stated in the form of 12 hypotheses (Table 1.3) which are going to be confirmed or overturned in this work.

II. Methodology

This chapter outlines the research methodology that has been applied for the study, research design and its appropriateness, methods and instruments that were used in order to obtain the data. It also thoroughly describes the target and study population as well as the final sample.

The chapter of methodology is divided into three sections. The first one includes the descriptive information regarding the respondents' age gender, work experience, etc. Among others confidence level and interval, degree of variability, and sample size accuracy were defined here. The second section encloses the data concerning the origin of the chosen instrument, its validity and reliability. Materials regarding the used in the research statistical tools were also mentioned in this section. The third part comprises the rationale for choosing of research method, research design, and sampling procedures. Moreover, this section contains units with particular focus on the encountered problems and ethical considerations. The information concerning pilot study and applied secondary data is also provided. Summary completes the methodology chapter.

2.1 Participants

The target population for this study includes students and alumnus of Belarussian Universities who is fluent in English, have worked (or had internships, or both) at two or more organizations, and had a class in HRM. All of the above mentioned conditions are predicated by logical factors. First of all, since the survey is all in English, the good knowledge of this language is a must in order to complete the questionnaire. Secondly, for the purpose of giving meaningful answers, respondents should have had enough work experience, or at least two places of work to compare. Finally, all of those surveyed should have had a HRM class so as to be familiar with terminology and clearly understand the processes they are asked to evaluate.

There are just three universities in Belarus that by 2014 hold classes of HRM (Belarusian State University (BSU), Belarusian State Economic University, and Academy of Public Administration under the Aegis of the President of the Republic of Belarus) among which just one university agreed to grant the aid in collecting the

information. Concerning this, the study population comprised the recent graduates and current students of BSU with relevant work experience. Since BSU is composed of 20 departments, it was decided to refer to the one which is focused upon human resources. Thereby, the Faculty of International Relations (FIR) was chosen.

The probability sampling was used for this study in order to guarantee the randomization of selection process as well as the lack of systematic and sampling bias in it. Moreover, properly done random selection allows making conclusions for the entire population.

Since the sample is chosen, the appropriate sample size for the population should be determined. The target population for this research includes around 12000 people. That figure was calculated in virtue of the number of universities with HRM class (3); number of departments where this class is taken (9, 5, and 4, correspondingly); average number of students in the group (85); and number of years during which this class was taught (8). Whence, the total target population consists of $(9+5+4)*85*8=12240$ respondents. In order to determinate the sample size two more parameters should be distinguished: confidence level and confidence interval. "BOLD Academic Research Resource Center" suggests using higher confidence intervals (+/-8 or +/-9) if the random sample is chosen. Thereby, for this study the interval of +/-8 was selected. What concerns the confidence level, it was picked off at the 95%, what is a good value. Thus, to calculate the sample size "BOLD Educational Software, Sample Size Calculator" by Dusick (n.d.) was applied. The sample size needed for population of 12240, confidence level of 95%, and confidence interval +/-8 is 148. That is the minimum amount of respondents which is necessary in order to confirm the sample size accuracy. It should be also mentioned that in order to get the appropriate level of precision, the degree of variability was 50% (or .50).

For the chosen sample the simple random sampling method was selected. It is considered to be a fair way to fix upon the sample from the entire population since every member has equal opportunity to be chosen. Therewithal, this method provides with the simplicity of sample assembling, unbiased selection, and the possibility of conclusion drawing from the study results.

The final sample consists of 161 respondents (what exceeds the required minimum of 148 to confirm the sample size accuracy). They compose 1.32% of approximate target population ($N=12240$) in which included graduates and current students who speak English with the relevant work experience in two or more organizations and good knowledge of HRM. All the participants of the study live or have lived in Belarus (Minsk) for at least two years, studied at BSU, FIR, and passed the class of HRM. Among the social-demographic characteristics of the final sample gender, age, highest level of completed education, years of work experience and work sector were distinguished.

Thus, out of 161 respondents, 46 (28.6%) are males and 115 (71.4%) are females (Appendix A), what can be explained by the higher amount of female students at the FIR, BSU (average proportion is 70% of females to 30% of males). The full age of participants is ranged from 20 to 56 (mean (M) is 24.93, standard deviation (SD) is 3.93) (Appendix B). At the same time it ought to be noted that 93.8% of the sample is composed of people whose age is between 20 and 27, while the rest 6.2% consists of respondents who is 30 (1 person), 34 (3), 35 (1), 36 (3), 41 (1), and 56 (1) years old. According to commonly used age classification system by PGA Group Consulting Psychologist (Gerstmann, n.d.) all the respondents of this study can be separated into three groups: 15-24 years (82 people or 50.9%), 25-34 years (73 people or 45.3%), and 35-44 years (6 people or 3.8%).

What concerns the educational level of respondents it is really high due to the conditions that were set for the target population (Appendix C). Thuswise, 106 (65.8%) of those surveyed have graduated from the university, 11 (6.9%) completed some graduate classes, and 8 (5.0%) have finished the graduate school. Consequently, 77.7% of all the participants obtained at least diploma of higher education. The rest 23.3% consists of the current students of FIR, BSU (2 people (1.2%) studying in the second year, 5 (3.1%) – in the third year, and 29 (18.0%) – in the fourth year).

The work parameters are important for this study since the subject under investigation is directly connected to respondents' experience. Thus, participants' years of work (Appendix D) as well as work sector (Appendix E) was studied. 97.5% of those surveyed have had at least one year of official full-time work experience. The remaining 2.5% that don't have relevant experience should have had at least two places of

internship, what is more than possible. Since internships are a part of educational process at FIR, BSU, and they start from the second year. Consequently, students by the end of the third year should have worked at least in two organizations (still according to Belarusian law it is not considered to be work experience). Taking into consideration those 2.5% who has never been employed, 87.6% have an experience of 1-5 years, while the rest 9.9% have worked six or more years. Thuswise, final sample mainly consists of people who have just started their careers ($M=3.34$, $SD=3.69$).

The differentiation among the participants' work sectors is pretty high. Thus, the first five positions are represented by Hospitality and Tourism (21 respondents or 13.0%), Information Technology (17 respondents or 10.6%), Finance and Economics (15 respondents or 9.3%), Advertising, Marketing, and Public Relations (13 respondents or 8.1%), and Human Resources (10 respondents or 6.2%); and make up 47.2% of the total sample. Such a distribution is very logical: it complies with the current situation on Belarusian labor market and reflects the fundamental majors of FIR, BSU. Thus, Hospitality and Tourism as well as Finance and Economics are the main specializations of the Management and Economic Departments of FIR, BSU, what explains high amount of received responses. Informational Technology is a leading branch on the market that provides highest average salaries, and therefore motivates qualified graduates to choose this sphere. What concerns Advertising, Marketing, and Public Relations and Human Resources, these directions are relatively new and thereby have high potential for development and growth, what stimulates workers to progress in these spheres. Other 23 work sectors are not represented by more than by 5.0% what is a good distribution in order to summarize the later findings.

2.2. Materials

For this study it was applied a questionnaire research instrument that was further elaborated on the basis of online platform "Survey Monkey" (this resource served as a main tool for data collection). What concerns the questionnaire research it is one of the most commonly used types that allows gathering the data from a widely scattered sample. Moreover, it is much simpler in terms of data obtaining and gives the possibility to save the time. On the other hand questionnaires are mainly lack in depth and some of their

parts may be misunderstood, disregarded, or omitted. A special attention should be also given to suitability of questionnaires, their theoretical framework background, validity, reliability, and appropriateness for hypotheses test, freedom of bias and absence of build-in clues. In this case for the purpose of guarding against errors it was decided to adapt four tools previously developed and used by other researchers and combine them in one survey. Suchwise, the final instrument for this study was created by author through the agency of already existed questionnaires. Its constituent was based on the theoretical model of performance appraisal impact on employees' motivation (Figure 1.17) and included four scales, one for each of the elements included in the model (except of appraisal characteristics chart) and five additional control variables.

The ordinal level of measurement was applied for all adopted questionnaires. For this purpose Likert's 7-point scale was used. Since not all of the original questionnaires have been based upon 7-point scale, some of them were transformed (that concerns 6-point Likert's scale of perceived accuracy and 5-point Likert's scale of perceived fairness). Forthputting of the 7-point Likert's scale is conditioned upon its higher perception of accuracy (Diefenbach, Weinstein, & O'Reilly, 1993), easiness of usage, and better reflection of a participants' objective evaluation (Russell & Bobko, 1992). Preston and Colman (2000) state that participants' test/retest reliability undergoes in scales with more than 10 options, while 7 seem to be the most appropriate. Moreover, Miller (1956) claimed that 7-point scale have been used by psychologists for a long time on the subconscious level and all the attempts to refer to the better category were unsuccessful since they didn't add much to the ratings' usefulness. Consequently, 7-point Likert's scale appears to be the best choice for the study.

The data was analyzed with the two main statistical tools: IBM SPSS Statistics 21.0 for Windows and AMOS 22.0 (Analysis of Moment Structures), what is an add-on module for SPSS. Each of these tools was used according to the needs. Thus, AMOS was applied as a main statistical instrument for this study. It was exploited in order to build a covariance structure model, run CFA, check the model fit indices, confirm the data validity and reliability, conduct invariance tests, find out mediation effects, etc. SPSS provided all the necessary functions to run the research as: univariate, bivariate, and multivariate statistics; description statistics; regression and principal analysis; *t*-test, etc.

2.2.1 Instrument. The final instrument consists of four scales where the questions are evaluated on the basis of 7-point Likert's scale and five additional control variables (Appendix F). According to Schwab (2005) control variables are used in research to decline the terms of errors as well as to increase the statistical strength of the study. Moreover, their presence abates the possibility of alternative conclusions. Therefore, variables such as age, gender, educational level, participants' work sector and work experience were controlled in this study. The respondents were asked to indicate their gender in the questionnaire (coded: 1=male, 2=female). The highest level of education that have been completed by those surveyed was coded as: 1=graduated from the high school, 2=1 year of university, 3=2 years of university, 4=3 years of university, 5=4 years of university, 6=graduated from university, 7=some graduate school, and 8=completed graduate school. To determinate the age and the work experience respondents were asked to fill in the fields of survey with the numbers which indicated the current full years of age and full years of work experience. What concerns the work sectors it was the most extensional part due to the wide variety of choices (39 spheres). This control variable includes all the active work sectors in Belarussian economy.

What concerns the scales the first one of Tremblay, Blanchard, Taylor, Pelletier, and Villeneuve (2009) is called Work Extrinsic and Intrinsic Motivation Scale (WEIMS) and studies employees' motivation. It includes six sub-scales, each of that refers to a different form of motivation described in literature review (Figure 1.3). The second scale of perceived fairness is adopted by Colquitt (2001) and comprises three sub-scales of procedural, distributive, and interactional fairness. The third one is taken from Russell and Good (1988) and concerns satisfaction with performance appraisal. Finally, the scale by Vest et al. (1995) evaluates the perceived accuracy.

2.2.1.1 Work extrinsic and intrinsic motivation scale. WEIMS consists of 18 items, which were initially developed by Tremblay et al. in 2009 (Appendix G) on the basis of Blais, Lachance, Vallerand, Briere, and Riddle's (1993) "Blais Inventory of Work Motivation (BIWM)" and measures employees' work motivation. This scale is also grounded on Deci and Ryan's (2000) "Organismic Integration Theory" (Figure 1.3) and includes six sub-scales (three items in each one) that compose the six types of motivation

(Table F1), which are external (items 2, 9, 16; Cronbach's alpha .81), introjected (items 6, 11, 13; Cronbach's alpha .71), identified (items 1, 7, 14; Cronbach's alpha .74), and integrated (items 5, 10, 18; Cronbach's alpha .84) regulation, demotivation (items 3, 12, 17; Cronbach's alpha .60), and intrinsic motivation (items 4, 8, 15; Cronbach's alpha .77). That differentiation allows producing better measurements of various motivational levels. Moreover, WEIMS can be used to measure the overall motivation as it is not confined only to intrinsic motivation (Tremblay et al., 2009). Since WEIMS contains six sub-scales, which are differentiated into demotivation, intrinsic motivation, and four sub-forms of extrinsic motivation (external regulation, introjected regulation, identified regulation, and integrated regulation) the usage of the overall scale gives an insight into whether an employee is demotivated, intrinsically, or extrinsically motivated (and allows to determinate the exact type of extrinsic motivation).

Thus, in order to figure out the participants' motivation they were asked in the survey to indicate to what degree the items reflect the reasons why they are currently involved in their jobs. For that end a 7-point Likert's scale was used ranging from 1 (very untrue of me) to 7 (very true of me). Sample items for WEIMS included "Because it allows me to earn money", "Because it is the type of work I have chosen to attain certain important objectives", "Because this job is a part of my life", etc.

Tremblay et al. (2009) confirms that this scale can be applied across different populations and with minimum concern towards the specificity of the sample. Moreover, WEIMS is a reliable (Cronbach's alpha for the whole scale is .84) and valid instrument that can be used for better understanding of correlations between work characteristics, respondents' motivation, and the processes of organizational functioning (Tremblay et al., 2009). Suchwise, WEIMS can be considered suitable for its function of evaluating employees' motivation and thereby it relates to the chosen purpose. It is based on the theoretical framework selected for this study and the content of the questionnaire is appropriate to test the proposed hypotheses. Consequently, WEIMS can be considered as an appropriate part of the overall instrument.

2.2.1.2 Perceived fairness scale. This scale includes 15 items which were originally developed and applied (Appendix H) by Colquitt (2001). The theoretical

framework of the used scale is based on the equity theory (Figure 1.7), and, to be precise, on the work of Sheppard et al. (1992). That impacted on the choice of three dimensions of procedural, distributive, and interactional fairness instead of four dimensions (with addition of informational fairness) how it was suggested in Colquitt's (2001) study. It should be mentioned that fairness is commonly sub-classified into three sub-categories (distributive, procedural, and interactional) what is supported by works of Baldwin (2006); Cropanzano, Prehar, and Chen (2002); Eigen and Litwin (2013); Tziner, Kaufmann, Vasiliu, and Tordera (2011); Yochi and Spector (2001). Thereby the final perceived fairness scale includes three sub-scales, what allows measuring the dimensions of procedural, distributive, and interactional fairness (Table F2).

Procedural fairness consisted of seven items (items 1-7) included in the final instrument (Table F2). The participants were asked to indicate the extent to which the conducted in their organization performance appraisal process arrive to their outcome. Therefor the 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was applied in the study. The sample items for procedural fairness are: "Have you been able to express your views and feelings during the performance appraisal?", "Has the performance appraisal been free of bias?" etc. The Cronbach's alpha reliability for this scale was .93.

Distributive fairness was measured by four items (items 8-11) included in the final instrument (Table F2). Participants in the survey were asked to indicate in their responses the extent to which proposed items refer to their outcome (otherwise speaking whether received performance appraisal ratings are measured fairly and lead to the deserved outcome) using the 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The sample items for distributive fairness are: "Is your outcome appropriate for the work you have completed?", "Is your outcome justified, given your performance?" etc. The Cronbach's alpha coefficient for this scale was .93.

Interactional fairness included four items (items 12-15) from the final instrument (Table F2). Respondents were offered to answer to which extent the suggested statements refer to their supervisors. As in the previous cases 7-point Likert scale with grading from 1 to 7 was used, where 1 is strongly disagree, while 7 is strongly agree. The sample for interactional fairness includes: "Has your supervisor treated you with dignity?", "Has

your supervisor refrained from improper remarks or comments?” etc. The Cronbach’s alpha reliability for the interactional fairness scale was .92. Consequently, each of the sub-scales is valid and reliable (Colquitt, 2001), and can be used to test the proposed hypotheses.

2.2.1.3 Satisfaction with performance appraisal scale. This scale consists of seven items (Table F3) initially developed and used by Russell and Goode (1988) (Appendix I) on the basis of studies by Burke, Weitzel, and Weir (1978) and Wexley, Singh, and Yukl (1973) that originally measured satisfaction with performance interview. In this case used scale is completely suitable for the function of measuring satisfaction with performance appraisal and thereby can be considered effective.

Participants were asked to recall the last performance appraisal with their supervisor (simply put to assess satisfaction with performance appraisal) and rate it on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Sample items for this scale include: “My last feedback interview (appraisal) increased my understanding of the job”, “I felt satisfied with the feedback interview (appraisal)”, etc. Validity and reliability (the composite reliability (CR) estimate for the appraisal satisfaction score was .75) of this scale was proved by Russell and Goode (1988). It should be mentioned that items 3 and 6 in the appraisal satisfaction scale have a reverse scoring. All in all this scale is an appropriate instrument for hypotheses testing and answering the studied questions.

2.2.1.4 Perceived accuracy scale. It includes four items (Table F4), which were originally developed and applied by Vest et al. (1995), and measures the accuracy of performance appraisal. This scale was initially created in order to evaluate the relationships between perceived accuracy and instrumentality beliefs (otherwise speaking desired future outcomes). Suchwise, expectancy theory (Figure 1.10) underlies the theoretic background of this instrument. Applying of this scale provides the opportunity to comprehend how accurately measured performance appraisal can lead employees towards the improvement and act as a motivator factor (Lussier & Hendon, 2013).

Participants were asked to rate their perception of the performance appraisal accuracy in their organizations based on the 7-point Likert's scale ranging from 1 (strongly disagree) to 7 (strongly agree). Sample items on this scale include: "My last performance appraisal accurately reflected my performance for the entire rating period", "My last performance appraisal was accurate", etc.

Perceived accuracy scale is a valid and reliable (the Cronbach's alpha for the scale is .96) instrument (Vest et al., 1995). It is effective in evaluation of the required and stated in theoretical model parameter of perceived accuracy since it refers to the theoretical framework. Moreover, its content is appropriate to test the set hypotheses. Thus, the scale of perceived accuracy is an appropriate part of the overall instrument used in this study.

2.3 Design and Procedure

The questionnaire for the study was elaborated on the basis of online platform "Survey Monkey" what was used as a main tool for data collection. This is one of the most widely applied web survey tools. Of its many advantages easiness of data gathering, flexibility of survey design, and cost minimization should be mentioned. Another very important moment that is worth noting is decreasing in data errors since the participants' responses received through web tools are automatically stored in database. Among the disadvantages the absence of respondents, possible survey fraud, and potential inability of reaching the target population ought to be noted. For this study one drawback was pulled through. Since there were no incentives except of the participants' desire to contribute to the advancement of the study, the idea of fraud can be dropped out. Nevertheless, the privation of direct contact with respondents and incapability to reach some people out of target population are on the front burner.

In order to comply with the chosen simple random sampling method the link for the survey was sent to the Head of the Management Department of FIR, BSU. Further, the department has sent the link to 500 alumnus as well as current students who meet the requirements of the study population. The recipients were chosen randomly from the filling system. The e-mails with links were sent throughout the duration of 12 days (50 messages per day, two day offs) in order to avoid spam mailout. One respondent from

each of 10 groups was contacted so as to check that the message was received. Consequently, the choice of respondents was absolutely independent, random, and everyone had equal opportunity to be chosen.

The time frame for the completion of the survey was a little over two months (from November 3, 2014 till January 5, 2015). The total number of responses was 267. Out of the overall amount of answers 103 were excluded on the basis of incompleteness and 3 more because of the same neutral answer on all the questions. Thus, the final sample enclosed 161 responses. Therefore, the response rate was at the moderate level of 53.4%. At the same time if we take into consideration only the surveys obtained for the study, the response rate will be 32.2%. It can be explained by a variety of reasons: lack of interest, absence of encouragement (bonuses, financial incentives, etc.), relative length of the survey, etc.

The piloting of research tool was necessary so as to fully realize that the questions would be understood by the participants correctly and to organize the appropriate order of items. For this purpose ten people (that were not included in the list of final 500 who received the invitation to participate in survey, but those who are in target population) were contacted personally two weeks before the inception of the survey. These were the graduates of FIR, BSU and their contact information was provided by the Department of Management of BSU (27 people were contacted for piloting and post piloting research, 7 refused to participate). The results of initial piloting allowed figuring out the problem areas of the survey what caused rephrasing of seven questions and their organization in accordance with the object of the study. It was also noticed that most respondents avoided answering the open-ended questions; thereby they were excluded or replaced with multiple choice questions.

The post piloting analysis was conducted as well. All the remarks concerning the survey were taken into consideration, what eventually resulted in its restructuring. The open-ended questions were replaced with multiple choices. Upon which the corrected survey was sent to the other ten people from the target population. There were no significant remarks in post piloting. Moreover, most respondents indicated their preference towards close-ended questions, what can be explained by their reluctance to

spent time on survey and easiness of this method. Thereby, the final instrument for data collection was developed.

Some problems appeared during the process of questionnaire administration. First of all, many participants felt reluctant to take part in the study since there was no incentives what eventually affected the total response rate. Secondly, a relatively large number of questions and the duration of the survey's filling had a significant impact on the completion rate. Thus, 103 respondents didn't finish the survey and quitted it (1 respondent (0.97%) on the questions 1-4; 51 (49.51%) on the questions 5-22; 41 (39.80%) on the questions 23-37; 9 (8.75%) on the questions 38-49; and 1 (0.97%) on the 50th question). Also in three surveys it was noticed a central tendency, where all the answers were at the middle rate. Thereby, since abovementioned problems cannot be overcome in online survey, they have been left unchanged. It ought to be noted as well that the possible increase in completion rate would significantly escalate the final sample.

It should be mentioned that ethical issues concerning participant's anonymity and voluntarism, the confidentiality of recovered data and informed consent, as well as plagiarism were envisaged in this study. At the beginning of every survey each respondent was informed that he/she participates in the research study. Participants were apprised regarding the purpose of the study, the use and implementation of collected data as well as their non-identified status. Accordingly, in order to guarantee the ethical principle of anonymity neither names nor identified information was required from the participants. The statement of voluntary engagement was given at the survey's cover page. Therefore those surveyed could stand back at any stage of the questionnaire filling in. Respondents confirmed their participation in research by completing the survey. In case of questions, or any regards, the contact details were provided and included e-mail, skype, and LinkedIn account. For the purpose of avoiding of academic dishonesty the used information from other theses, dissertations, textbooks, etc. was sited in a befitting way through in-text references and bibliography.

Secondary information was collected as well. Already documented information in the form of theses, dissertations, textbooks, etc. was applied for this study. These sources were reviewed and used in order to clearly understand the subject under investigation. Moreover, it provided a means to compare the thoughts and findings of other researchers

relevant to the stated in this study problem. Almost all the information was obtained through scholarly search engines (internet based) and library readings.

2.3.1 Research method and design appropriateness. There was chosen a quantitative research method for this study, what is attributable to many reasons. They can be divided into four broad categories: aim of the research, usage of the research, data gathering instrument, and approach.

From the standpoint of aim, quantitative research is generally used to develop and prove or disprove the hypotheses, while the primary goal of qualitative research is to provide the complex portrayal of the study. Since the main purpose of this work is to reveal the presence of performance appraisal impact on overall employees' motivation (that was represented in the form of 12 hypotheses), the selection of quantitative research in terms of chosen goal seems the most logical and convenient. At the same time set hypotheses make the study narrower, form more focused description, and result in more conclusive type of study which is the characteristics of quantitative research. Moreover, as it can be seen from the theoretical framework that the generation model was built, hypotheses were set; instruments and methods of measurement were developed. All of these elements (being the part quantitative research) allow answering the research questions and reach the desired research goals.

What concerns the usage of the research, the presence of earlier studies on the topic "impact of performance appraisal on employees' motivation" (which is described more detailed in literature review) allows making an assertion that this issue is at the late phase of research. Since the theoretical basement of stated problem (videlicet performance appraisal, motivation, and their interrelations) is reasonably large, the usage of quantitative research will bring a clear understanding of what to expect in the study in contrast to already conducted researches (which can be considered as qualitative ones). Consequently, the presence of earlier studies on the chosen topic moves the work to the later stage at which quantitative research is strongly recommended.

With an eye to prove or decline the set hypotheses (otherwise speaking to solve the problem under investigation, videlicet to identify the relationship between performance appraisal and motivation), it is essential to find out the interrelation or

correlation between different variables. The usage of statistical and mathematical tools (surveys, SPSS, questionnaires, AMOS, etc.) in this context is a must. Since qualitative researches are mostly focused on studying issues that are difficult to quantify mathematically (as beliefs, attributes, etc.) it is obvious that quantitative research should be used in this study. Moreover, properly used instruments allow getting unbiased results which are free of external factors.

Finally, in terms of approach, quantitative research is objective due to usage of precise measurements in it. That allows analyzing the data without subjectivity (which is inherent to qualitative research), what eventually results in better validity and reliability of the study. Thus, quantitative research seems to be the most appropriate and convenient for this study since it allows reaching the set goals, answering the research questions, solving the set issues, and supporting the chosen theoretical framework.

The potential impact of performance appraisal on employees' motivation is represented in this work through the set hypotheses. The level of correlation between included in the offered hypotheses variables suggests that there is an interrelation between them or not. In order to accomplish the desired research goals it is necessary to measure the strength and the direction of relationship between included in the hypotheses variables by dint of statistical tools. In this instance correlation design seems to be the most appropriate to this study as it is mainly used to describe and measure the level of interrelation between two or more variables (Creswell, 2012). Moreover, it allows collecting information from many subjects at the same time, study multiple variables as well as their interrelations, and predict the outcomes which are based on etiologic relations between variables; what is sufficient in this work. The primary source of data collection in correlation design is surveys, what perfectly suites to the chosen in the study strategy of information gathering. As a result, the final analysis will include generated from the survey (each question) data and interrelations between established variables. It should be also mentioned that correlational design is an exploratory study which precedes the experiment. Since experiment is mainly considered as laboratory study (due to the necessity of control over all other variables except one which is under study), the correlational design seems to be the most appropriate choice being a pre-experimental research.

What concerns the type of correlation research, explanatory design appears to be an optimum selection for the chosen study. Thus, according to Creswell (2008) it is mostly conducted in order to determinate the level of co-variation between two or more variables (what provides a means of accomplishing the set goals). Moreover, due to the difficulties in reaching the participants, the explanatory design appears to be a perfect choice as the data is collected here just once. It can be explained by the fact that the focus of researchers in explanatory design is not premised on respondents' past or future performance. As a result participants are analyzed as a single group what makes it possible to summarize the findings. It should be also mentioned that the conclusion in this case will be drawn from the statistics alone.

2.3.2 Measurement of variables. Regardless to the fact of prevalence of many kinds of variables, there are three of them that are most commonly used in researches, which are independent, dependent, and control variables. Burke and Christensen (2014) define an independent variable as the one that is considered to bring about the swing to occur in another variable. In the research an independent variable is normally manipulated directly (by researcher) or indirectly (by natural factors). It comes before another variable because of the production of changes in it. However, dependent variable is the one that is deemed to be influenced by one or several independent variables. Burke and Christensen (2014) emphasize their attention on the cause-and-effect relationship between independent and dependent variables. That means that the changes in independent variable result in changes in dependent variables and the cause between them can be observed.

In view of the above mentioned it is necessary to refer to correlation design and its characteristics. First of all in correlation research variables are simply measured, but not manipulated (what already contradicts to the definition of independent variable). Manipulation of variables allows establishing cause and effect relationships what is impossible to do in correlation design. Secondly, even significant interrelation between variables in correlation study won't prove the existence of cause-and-effect relationship among them. At the same time it should be mentioned that the knowledge of the existence of relationships between variables allows making predictions much more

accurately. Moreover Creswell (2008) noticed that it cannot be pointed clearly that correlation doesn't mean causation. Finally, in correlation study a chosen independent variable may serve as a dependent one, the converse is also true. Thus, if to make a look at hypotheses 1a, 1b, and 1c (Table 1.3) fairness may be considered here as independent variable, while in hypotheses 3a, 3b, and 3c (Table 1.3) it is seems like a dependent one. Despite of the fact that these are different experiments, the so called "reverse causality" is also possible. Moreover, among all the variables stated in suggested hypotheses (Table 1.3) just employees' motivation may constantly be considered as dependent variable and perceived accuracy may constantly be considered as independent one while all the other variables (distribution fairness, procedural fairness, interactional fairness, and appraisal satisfaction) appear for both independent and dependent ones.

Taking into consideration the forgoing information, it comes into the open that division into independent and dependent variable in correlation design is inappropriate. Moreover, "BOLD Academic Research Resource Center" strongly encourages refer in correlational study to the variables as research variables rather than independent and dependent ones. Consequently, in this study all the variables which can be defined as independent or dependent will be called research variables, they are: employees' motivation, satisfaction with performance appraisal, perceived accuracy, and perceived fairness (with separation onto distribution fairness, procedural fairness, and interactional fairness).

At the same each of the research variables will appear for independent or dependent one in each of the 12 set hypotheses. It is necessary for conventional identification of the correlational direction. In order to avoid the possibility of causation claiming among variables the independent variables will refer to as predictors while dependent as the figures of merit when correlation design is applied. Suchwise, independent variables will be distribution fairness (hypotheses 1a and 2a), procedural fairness (hypotheses 1b and 2b), interactional fairness (hypotheses 1c and 2c), perceived accuracy (hypotheses 3a, 3b, 3c, 4, 5), and appraisal satisfaction (hypothesis 6); dependent variables will be motivation (hypotheses 1a, 1b, 1c, 5, and 6), appraisal satisfaction (hypotheses 2a, 2b, 2c, and 4), distribution fairness (hypothesis 3a), procedural fairness (hypothesis 3b), and interactional fairness (hypothesis 3c) (Table 1.3).

2.4 Summary

To sum up, the chosen quantitative method of research is completely on par with the study. It is documented by the many provisions. First of all, since quantitative research is generally used to develop and prove or disprove the hypotheses (and 12 of them were set in literature review), its choice seems to be the most logical and convenient from the standpoint of aim. The later stage of the studied issue (in consequence of the presence of earlier researches) is inherent in quantitative method. Finally, the mathematical study of the set hypotheses through the use of statistical tools what provides the precise measurements and allows analyzing the data without subjectivity are significant elements of quantitative research in the context of data gathering instrument and approach.

In order to accomplish the desired research goals the correlation design was chosen. This choice was conditioned by its best suitability for measuring the strength and the direction of relationship between included in the hypotheses variables by dint of statistical tools. Moreover, the possibility to collect information from many subjects at the same time, study multiple variables as well as their interrelations, and predict the outcomes which are based on etiologic relations between variables confirms the design appropriateness.

The target population included 12240 people that have lived in Minsk (Belarus) for two years or more, speak English, had at least two places of work or internship, and passed HRM class. For the study population of FIR, BSU was chosen. The final sample composed 161 respondents from 20 to 56 years old, representing different spheres of Belarussian economy with average work experience of 1-5 years. Around 80% of all participants have graduated from the university. That all signifies that the majority of the final sample is people who has recently graduated and just at the beginning of their career path.

In order to simplify the data gathering procedure and minimize the cost of the study online survey tool was used. The respondents were found through the Management Department of FIR, BSU. The instrument for the study was developed by author through the agency of already existed questionnaires. It included four previously created and applied surveys that were slightly changed (some questions were rephrased) and five

control variables. Pilot and post pilot studies were conducted so as to fully realize that the questions would be understood by the participants correctly and to organize the appropriate order of items. Finally, chosen scales, composed instrument, and collected information allow access the set hypotheses and come over to the analysis chapter of this study.

III. Results

This chapter presents the analysis and the results of the conducted surveys and is organized in six sections. It starts with the descriptive statistics of the items. The second part presents the development of the diagram and the procedures for confirmatory factor analysis (CFA) that is used in order to validate the theoretical model. In this case theoretical model serves as a priori theory to assess the model fit of the data. A special attention is given to modification indices and standardized residual covariances (SRC) as to the parameters that provide information regarding the improvement of model fit. Convergent validity (CV), discriminant validity (DV) and reliability coefficients are presented in this part as well. Following this, common method bias (CMB) tests are conducted so as to avoid bias in the dataset. The second part finishes with validation of the factor structure by invariance check and composites imputation. The third section consists of exploratory factor analysis (EFA), which is conducted out of due diligence. One of its primary goals is checking the factor structure and data appropriateness. The information concerning face, discriminant, and convergent validities (that is double-checked in SPSS) is provided in this section as well. Reliability analyses of both each scale used in the survey and the overall scale are represented at the end of the third part. The fourth section studies the data for assumptions that underlying the regression models and should be satisfied in order to confirm the validity of the results. Thus, linearity, homoscedasticity, independence of the random errors, normality, and multicollinearity are reviewed here. The fifth part is represented by correlation analysis, the primary goal of which is to reject or not reject the null hypotheses in favor of the originally stated. Finally, in the last section all the research hypotheses were tested using structural equation modeling procedures. Particular emphasis is given to direct and indirect effects of observed mediation models as well as to the goodness of fit of the revised model. Summary of the findings concludes the chapter.

3.1 Descriptive Statistics

There were no missing values in this study since the requirement for submission of the survey was the answering of all the questions. In overall descriptive statistics

(Appendix J) the values for almost all items (those of WEIMS, perceived accuracy, perceived fairness, and satisfaction with performance appraisal scales) are ranked from the minimum of 1 to the maximum of 7, with the range of 5-6. At the same time for questions M1, M4, M14, P2, P5, S1, S2, S6, and A1 none of the respondents answered “strongly disagree” (1) or “very untrue of me” (1), what is a small evidence of leniency. The question S4 didn’t get answers “somewhat disagree” (3) and “strongly agree” (7), while S5 was off “disagree” (2). Thus, 10 variables (M1, M4, M14, P2, P5, S1, S2, S5, S6, and A1) are lacking one type of the response and 1 variable (S4) is missing two types. By analyzing the means of all the original variables in this study (Appendix J) it can be concluded that respondents were peculiar to agree or choose the neutral position by answering the survey questions (what indicates the presence of remote level of leniency and central tendency in the participants’ responses). Thus, in the provided Likert’s scale where 1 signified “strongly disagree” and 7 “strongly agree” among 44 variables 19 items (43.2%) had the value 5 and higher, and 21 (47.4%) were at the range between 4 and 5. Moreover, 19 out of those 21 items are greater than 4.5. There are just 4 variables with $M \leq 3.5$ (M3, M12, M17, and S4). The first three represent the demotivation sub-scale of WEIMS and theoretically can be considered reversed, while item S4 has the strongly marked central tendency with $M=3.62$.

SD for the items in this study is ranged from 1.055 to 1.602 (Appendix J) what signifies the relatively low polarization of respondent’s answers (otherwise speaking low to normal dispersion of a set of data values). Thus, for the scale of procedural fairness *SD* is between 1.177 and 1.320; for distributive fairness $1.260 \leq SD \leq 1.392$; for interactional fairness $1.314 \leq SD \leq 1.453$; for perceived accuracy $1.092 \leq SD \leq 1.220$. For the scales of WEIMS and satisfaction with performance appraisal *SD* is a little bit higher, up to 1.532 and 1.602 correspondingly. At the same time if items S3 and S6 that represent reverse scores are excluded, the values of *SD* for the scale of satisfaction with performance appraisal will be $1.057 \leq SD \leq 1.289$. Consequently, respondents’ individual answers to the survey questions are pretty close to the mean value.

3.2 Factor Analysis

All the questionnaires used in this study were built from existing scales that have been validated in preceding researches. In this case the primary goal of factor analysis is to confirm the factor structure of a set of observed variables rather than to explore it. That is logical since the scales are established and it is known which items belong to which constructs. Moreover, the relationship between items is identified and there is no need in its further exploration. Thus, in order to affirm the expected relationship between items and to refine the measurement model CFA will be conducted first. Further, EFA will be performed out of due diligence.

3.2.1 Confirmatory factor analysis. CFA is more theory, or hypothesis driven analysis which allows placing essentially meaningful constructs on factor model and testing hypothesis concerning definite factor structure. In this study AMOS 22.0 (special purpose software) was used to carry out CFA. The confirmatory factor diagram is represented in Appendix K. The structure of this diagram is based on literature review and used in the study validated scales. Thus, squares represent observed variables while circles refer to the latent concepts; single-headed arrows show the direction of assumed causal impact, and doubled-headed arrows point at the covariance between latent variables. It is generally assumed that latent variables cause the observed variables. There are totally 12 latent variables in the diagram that present the common factors (“Accuracy”, “Procedural”, “Distributive“, “Interactional“, “Satisfaction“, “Motivation“, “Demotivation“, “External“, “Introjected“, “Identified“, “Integrated“, and “Intrinsic“). Thus, observed variables A1, A2, A3, and A4 form the latent variable “Accuracy”; I1, I2, I3, and I4 form the latent variable “Interactional”, etc. A special attention should be given to the latent variable “Motivation”. This is a second order factor that combines the values of all the latent variables relating to WEIMS. The unique factors (e1-e50) impact only the observed items and incorporate all the variance that is not captured by common factor. Otherwise speaking these are the measurement errors. Thus, the confirmatory factor diagram fully represents the theoretical framework with separation into six factors, five of which include “Satisfaction”, “Accuracy”, “Procedural”, “Distributive”, and

“Interactional”, while the last one of “Motivation” encloses the latent variables of “Demotivation”, “External”, “Introjected”, “Identified”, “Integrated”, and “Intrinsic”.

An important step in CFA is to confirm that the specified model is identified. In this case all the unknown parameters can be rewritten relative to covariances and variances of the set variables. The value of degrees of freedom (what is the difference between the number of distinct sample moments and the number of distinct parameters to be estimated) in this case is the exponent that shows whether the model is unidentified, identified, or overidentified. The number of distinct sample moments can be calculated through the equation $p*(p+1)/2$. For the specified model it is $44*(44+1)/2=990$. The number of distinct parameters to be estimated is 109. Thus, the number of degrees of freedom is $990-109=881$, what makes this model overidentified. It should be mentioned that since the latent variables are unobserved and as a result their scales area unknown, any confirmatory model would be unidentified. In order to avoid the identification issue the metric of the latent variable should be set. It can be done both by setting the variance of the latent variable to one or by setting the variance of one of its factor loadings to one. For the specified model the variance of the factor loadings were set to one for the next items: M3, M16, M13, M1, M5, M8, P5, D1, I4, A3, S4; and the variance of latent variable “Demotivation” was set to one as well (the choice of the factor loadings that were set to one is random).

3.2.1.1 Model fit. Model fit shows how well the model of the proposed factor structure accounts for the correlations between items in the dataset. Thus, if we take into account all major correlations incidental to the dataset (with relation to the items of the model) there will be a good model fit. On the other hand, the presence of the substantial variance between the proposed and observed correlations would signify about poor model fit. In order to determinate the goodness of the model fit specific measures can be calculated, among which it is necessary to point out absolute fit indices (Chi-square (χ^2), ρ -value for the model, CMIN/DF, GFI, AGFI, RMSEA, PCLOSE), incremental fit index (CFI), and parsimony fit index (PGFI) (Hooper, Coughlan, & Mullen, 2008).

Absolute fit indices according to McDonald and Ho (2002) designate how well the initial model fits the sample data and shows which of the proposed models have the

best fit. The measurements of this category present the most fundamental suggestion how the proposed theory fits the data. The traditional method to evaluate the overall model fit is to use χ^2 . Barrett (2007) indicated that a good model fit would have insignificant results at the threshold of $\rho=.05$. Despite of the popularity of χ^2 there are several limitations that should be noted. First of all, chi-square test admits multivariate normality what eventually may result in the rejection of the model even though it is acceptable. Secondly, according to Bentler and Bonnet (1980) χ^2 statistic is sensitive to a sample size, and therefore the model almost always will be rejected if the sample size is large. In order to minimize the impact of sample size on χ^2 Wheaton, Muthen, Alwin, and Summers (1977) proposed new index CMIN/DF, which is called relative/normed chi-square (χ^2/df). The value of CMIN/DF between 1 and 1.5 is considered to be very good, between 1.5 and 2.0 – good, and between 2.0 and 3.0 – acceptable (Hair, Anderson, Tatham, and Black, 1998).

Goodness of Fit Statistic (GFI) and Adjusted Goodness of Fit Statistic (AGFI) according to Tabachnick and Fidell (2007) measure the proportion of variance that is explained by the estimated population covariance. Composed by the model variances and covariances show the degree, to which model repeats the observed covariance matrix. It should be mentioned that large samples and greater amount of parameters increase the value of coefficients (MacCallum & Hong, 1997). These indices range from 0 to 1, with the threshold of .90 for GFI (.95 for smaller factor loadings and smaller sample sizes), and .90 for AGFI (Miles & Shevlin, 1998).

Root Mean Square Error of Approximation (RMSEA) shows how well the model fits the population covariance matrix, while the parameter estimates are unknown and optionally chosen (Byrne, 1998). According to Diamantopoulos and Siguaw (2000) this coefficient recently became one of the most informative indices because of its sensitivity to the number of estimated parameters in the model. McQuitty (2004) mentioned that RMSEA allows testing the null hypothesis (poor fit) more precisely what should be reported together with the value of the coefficient. The RMSEA threshold for a well-fitting model is .06 (Hu & Bentler, 1999).

Another coefficient ρ of Close Fit (PCLOSE) is connected with RMSEA and provides the one-sided test of the null hypothesis (H_0) that RMSEA equals .06. That is

called a close-fitting model. The alternative hypothesis is that RMSEA is greater than .06. In this case if the value of ρ is great than .05, the model fit will be “close” since ρ is not statistically significant. But if ρ is less than .05 and therefore statistically significant, RMSEA should be greater than .06 what makes model fit worse than a close-fitting model. Though, the value of PCLOSE should be .05 and greater.

Incremental fit indices are based on the comparison of χ^2 value with a baseline model what excludes the presence of χ^2 in their raw. The null hypothesis for these models, according to McDonald and Ho (2002), state that all the variables in them are uncorrelated. The most popular incremental fit index and at the same time the most often reported fit coefficient according to Fan, Thompson, and Wang (1999) is Comparative Fit Index (CFI). The main idea of CFI is that the null model where all the latent variables are not correlated is compared with the sample covariance matrix. This index is least effected by the sample size (Fan et al., 1999) and ranges from 0 to 1. The CFI cut-off is .90; however, Hu and Bentler (1999) stated the importance of increasing the threshold till .95 in order to affirm the goodness of the model fit.

Finally, parsimony fit indices were created in order to overcome an issue of dependence of estimation process on the sample data. One of them is Parsimony Goodness of Fit Index (PGFI), which is based on GFI with the degrees of freedom that are adjusted for loss. There is no established threshold level for this coefficient, even though Mulaik et al. (1989) state that it should be within the .50 region.

Thuswise, all the indices present different approaches of their calculation what allows to decrease the possibility of wrong establishment of the model fit. All the thresholds are represented in Table 3.1.

Table 3.1
Recommended Values of Goodness-of-Fit Measures

Index	Threshold	Reference
CMIN/DF	1.0 – 1.5 very good;	Hair et al., 1998
	1.5 – 2.0 good;	
	2.0 – 3.0 acceptable	
GFI	>.95; (>.90 acceptable)	Miles and Shevlin, 1998

Index	Threshold	Reference
AGFI	>.90	Miles and Shevlin, 1998
PGFI	>.50	Mulaik et al., 1989
RMSEA	<.06	Hu and Bentler, 1999
PCLOSE	>.05	Hu and Bentler, 1999
CFI	>.95; (>.90 acceptable)	Hu and Bentler, 1999

For the specified model $\chi^2=1462.401$, $\rho=.000$, what is acceptable since the sample size is big enough. The value of CMIN/DF=1.660 proves the above made conclusion. GFI=.719, AGFI=.684, what is way below the threshold, while PGFI=.640. CFI=.846, what is also lower than the acceptable minimum. The indices of RMSEA=.064 and PCLOSE=.000 signify about the bad model fit as well. Thus, this model doesn't fit well and the actions should be taken in order to improve it.

3.2.1.2 Modification indices. Modification indices according to McCoach, Gable, and Madura (2013) indicate the level to which χ^2 will be decreased in case of addition of a particular parameter to the model. Otherwise speaking they provide information regarding the parameters that can be added in order to improve the model fit. These are so-called remedies to discrepancies between the estimated and proposed models. In CFA modification indices are mostly used to see the possible covariances. Thus, Kenny and McCoach (2003) claim that we shouldn't covary error terms with the other error terms that are not associated with the same factor. We also shouldn't covary them with the latent or observed variables. Consequently, the best available modification that can be done in CFA is to covary the error terms of the same factor with the greatest covariances. For the specified model the greatest covariance is between e40 and e43, which is $cov_{(e40, e43)}=65.983$. All the other covariances are lower than 24.377. In order to increase the model fit these two error terms (e40 and e43) were covaried. That increased the model fit: CMIN/DF=1.569, GFI=.731, AFGI=.697, PGFI=.650, CFI=.868, RMSEA=.060, PCLOSE=.005 and decreased the covariances between other items up to 15.231 in general and 11.141 between the error terms of the same factor. Since the model fit is still not good enough and there is no possibility to increase the model significantly through

modification indices (since covariance of 11.141 is too low to make substantial changes) it is necessary to refer to the other method.

3.2.1.3 Standardized residual covariances. SRC are very similar to modification indices since they show the discrepancies that appear between the estimated and proposed models. Moreover, SRC also indicate whether those discrepancies are significant or not. According to Brown (2015) the acceptable value of SRC can be up to 1.96. This value corresponds to the statistically significant z -score at .05 alpha level. All the values that exceed 1.96 can be considered significant and therefore suggestively decrease the model fit. In SRC matrix the biggest amount of SRCs that are greater than the threshold is at M16 ($N=19$). Therefore this observed variable should be removed. After the extraction of M16 the model fit improved, but still not enough: CMIN/DF=1.544, GFI=.737, AFGI=.703, PGFI=.653, CFI=.876, RMSEA=.058, PCLOSE=.016. It should be mentioned that the variance of the M16 that was set to one now belongs to M2. The next item with the biggest amount of SRCs that are above the limit is M13 ($N=6$). The model fit after the removal is: CMIN/DF=1.516, GFI=.746, AFGI=.712, PGFI=.658, CFI=.886, RMSEA=.057, PCLOSE=.045. The variance of item M6 was set to one since M13 was eliminated. The next item with $N=4$ SRCs that exceed the threshold is S4. This item has the greatest SRC in the matrix, which is -4.383. After its removal the model fit increased: CMIN/DF=1.502, GFI=.755, AFGI=.721, PGFI=.664, CFI=.894, RMSEA=.056, PCLOSE=.072. The variance of S6 was set to one. The last item that makes significant changes in model fit is M3. It has $N=7$ SRCs above the threshold. After its extraction of M3 (the variance of M12 was set to one) the model fit becomes acceptable: CMIN/DF=1.483, GFI=.762, AFGI=.728, PGFI=.667, CFI=.901, RMSEA=.055, PCLOSE=.122. Thus, CMIN/DF signifies the presence of very good model fit; CFI is at the acceptable minimum; RMSEA and PCLOSE are good. The only issue is with GFI and AFGI, but these indices are dependent on the sample size and CFI in its turn is the coefficient that is more independent from the sample size. In this case the model fit can be considered acceptable.

3.2.1.4 Validity and reliability. One of the most important constituents of CFA is the establishment of convergent validity (CV) and discriminant validity (DV) as well as the reliability. CV according to Khine (2013) identifies whether the scores on items that assess a single construct are intercorrelated to the right degree and eventually measure the same underlying dimension. Fornell and Larcker (1981) mention that in order to indicate CV it is necessary to examine internal consistency, reliability, loadings, and average variance extracted (AVE) of items. Moreover, they specify that the final criterion for CV is a measure of AVE which value should be at the minimum level of .50. Thus, acceptable CV is when $AVE > .50$. The presence of CV issues means that the observed variables don't correlate well enough with each other within the factor to what they refer. Otherwise speaking, the latent factor isn't sufficiently explained by its observed variables.

The criterion for DV according to Khine (2013) is that the square root of AVE for each construct would be greater than the inter-construct correlation. Moreover, Hair, Black, Babin, and Anderson (2010) mention that there are two more criteria for DV. The first one is that maximum shared variance (MSV) should be smaller than AVE, and the second one is that average shared variance (ASV) should be smaller than AVE as well. The presence of issues with DV signifies that the observed variables are more correlated with other variables rather than with those that belong to the parent factor. In other words, the latent factor is better explained by the variables from the other factor rather by its own variables. What concerns the reliability of CFA, the main criterion is that CR would be greater than .70 (Hair et al., 2010).

The result of statistical analysis for the model with the removed items M3, M13, M16, and S4 (Appendix L) showed that there are some significant issues with both DV and CV. There are three main factors with these issues: "Satisfaction", "Procedural", and "Accuracy". For "Satisfaction" $AVE = .343$, what is less than the threshold of .50 (CV issue); the square root of the AVE (which is .585) is less than the absolute value of the correlations with "Procedural" (.626) and "Accuracy" (.812) (DV issue); $AVE(.343) < MSV(.812)$ (DV issue); and $AVE(.343) < ASV(.397)$ (DV issue). For "Procedural" factor there is just CV issue, where $AVE(.464) < .50$. For "Accuracy" there are multiple DV issues: $AVE(.708) < MSV(.812)$, and the square root of the AVE (which

is .841) is less than the absolute value of the correlations with “Satisfaction” (.901). All the other factors exceeded the minimum reliability value of .70 and all the criteria for DV and CV.

In order to increase DV and CV of the factors that face validity issues some manipulations have been done. First of all, it is necessary to admit that both “Accuracy” and “Satisfaction” have DV. Moreover, these two factors have the highest covariance between each other, which is .90 (inter-construct correlation) and greater than the square root of AVE. That means that the variables of one of the factor are more correlated with the variables of the other factor than with those of the parent factor. In this case Hair et al. (2010) suggest conducting EFA just for the two factors (which are in our case “Accuracy” and “Satisfaction”) and point out the variable or variables that are cross-loaded. Their removal may significantly reduce the covariance.

EFA for “Accuracy” (A1, A2, A3, and A4) and “Satisfaction” (S1, S2, S3, S5, S6, and S7) was conducted in SPSS 21.0. It was chosen the Principal Axis Factoring (PAF) extraction method with Varimax rotation. Rotated factor matrix is presented in Appendix P. As it can be seen there is a significant issue since almost all the items (except S3 and S6, which represent the reverse scoring) belong to the first factor. That means that variables of accuracy and satisfaction measure practically the same things. What concerns the item with the highest cross-loading, it is S5, which loading on the first factor is .656, and on the second factor is .339. After the extraction of S5 the issues with DV for “Accuracy” were eliminated (Appendix M). At the same time for the factor of “Satisfaction” DV problems remained the same. Further manipulations with items of “Accuracy” and “Satisfaction” didn’t make any changes. Thus, the issues with DV for “Satisfaction” remain: $AVE(.329) < MSV(.666)$, $AVE(.329) < ASV(.336)$, and the square root of the AVE for “Satisfaction” (.574) is less than the absolute value of the correlations with “Accuracy” (.816) and “Procedural”(.606). It should be noticed as well that together with the extraction of S5 the composite reliability (CR) for “Satisfaction” dropped down to a threshold of .70 and even a little bit lower. Its value is .698. Since it is very close to the threshold it is considered reliable.

To solve the issues with CV it is necessary to refer to Efron (1981), who claims that AVE almost always can be improved by dropping cases. Thus, the "Jackknife-like"

procedure, the main idea of which is removing and replacing cases from the data set trying to find the largest AVE improvement, was used for this purpose. For the factor “Procedural” AVE=.464, what is lower than the threshold of .50. Using the procedure "Jackknife-like" it was determined that the removal of items P2, P3, P4, and P5 would decrease AVE for this factor to .461, .451, .443, and .463 correspondingly; while removal of items P1, P6, and P7 may increase this index up to .470, .481, and .476, correspondingly. The removal of two items (P6 and P7) will increase AVE up to .493, what is still below the threshold. But the removal of items P1, P6, and P7 will increase AVE up to .513. In this case in order to comply with CV for the factor “Procedural” items P1, P6, and P7 were removed and therefore an issue with CV for this factor is solved (Appendix N).

For the factor of “Satisfaction” the removal of items S1, S2, and S7 wouldn’t significantly increase AVE. Moreover, together with extraction of these items other problems with CR and DV may arise. But the removal of items S3 and S6 will increase AVE up to .460, what is pretty close to the threshold of .50. What is more important is that together with the removal of S3 and S6 the CR for “Satisfaction” becomes .718 and reaches its minimum (Appendix O). It should be also mentioned that the square root of the AVE for “Satisfaction” (which was .574) increased up to .678 and now it is bigger than the absolute value of the correlations with “Procedural” (which is .583 now), but still lower than the absolute value of the correlations with “Accuracy” (which is .796). Thus, items S3 and S6 were deleted and the variance of S7 was set to one.

After all of those manipulations CR for all the factors is greater than .70 and therefore reliability is confirmed (Appendix O). The only issue that wasn’t solved is with the factor of “Satisfaction”, which faces the problems of CV (AVE(.460)<.50) and DV (AVE(.460)<MSV(.634), and the square root of the AVE for “Satisfaction” (.678) is still less than the absolute value of the correlations with “Accuracy” (.796)). It should be noticed that after the removal of items S3, S5, S6, P1, P6, and P7 the model fit improved: CMIN/DF=1.432, GFI=.800, AFGI=.765, PGFI= .681, CFI=.926, RMSEA=.052, PCLOSE=.346.

3.2.1.5 Measurement model invariance. There are two types of invariance: configural and metric that should be tested during the CFA prior to composite the variables for the path analysis. That should be done for validation of the factor structure and confirmation that the loadings are sufficiently equivalent across the groups. If the model invariant that means that the variables measure the same underlying construct for different groups.

Configural invariance examines whether the factor structure of the observed CFA is adequately fitted when the groups are both tested freely (without any cross-group path constraints) and together. In order to check for configural invariance (and further for metric invariance) two groups were created with the data split along the sample. The sample was randomly divided into two equal parts: 80 respondent in the first half and 81 respondents in the second one. The resultant model fit appeared to be a little bit worse than expected: CMIN/DF=1.430, GFI=.735, AFGI=.688, PGFI= .625, CFI=.894, RMSEA=.037, PCLOSE=.400. Thus, GFI and AGFI decreased, but not really significant, and their values in comparison with the original model fit are acceptable. CMIN/DF, PGFI, and PCLOSE are good. CFI dropped down up to .894, what is less than the threshold of .90, but still pretty close to it. RMSEA reached a very good level. Thus, the factor configuration across the groups can be considered acceptable and it is possible to proceed with the invariance test.

Metric invariance assessment, according to Meredith (1993) performs the χ^2 difference test on the two groups. Thus, the invariance of this test would mean that value of ρ for the χ^2 difference test is insignificant and therefore there is no substantial difference between the groups. For the χ^2 difference test the present constraints were removed and placed into the latent factor. Then all the unstandardized factor loadings were constrained to be equal across the groups. The fit of the resulted model ($\Delta\chi^2_{[1586]}=2213.401$, $\rho=.994$) is acceptable in comparison with the fit of configural invariance model ($\chi^2_{[1518]}=2171.045$), Since $\rho=.994$ isn't significant, groups are not different at the model level and therefore the metric invariance is met.

In order to confirm the abovementioned conclusion multigroup moderation test with critical ratio (C.R.) for differences was conducted (Appendix Q). As it can be seen almost all the indicators (except of P3←"Procedural" ($z=-2.524$, $\rho<.05$) and

M14←"Identified" ($z=2.089$, $\rho<.05$)) are not significantly different between the groups. Since almost all the z-scores are insignificant, the two groups can be considered not statistically significantly different (Salkind, 2007). Therefore the test for metric invariance is passed.

3.2.1.6 Common method bias. According to Podsakoff, MacKenzie, Lee, and Podsakoff (2003) CMB refers to the bias in the dataset because of external to the measures issues. Thus, external to the set questions circumstances may significantly impact the given responses. Since just an online survey was used to collect the data (single method), systematic response bias may appear. This bias can either deflate or inflate the received responses. Significant CMB indicates that the majority of the variance in the study can be explained by the single factor. There were used two approaches to test the data for CMB: Harman's single factor test and common latent factor (CLF) method.

Haman's single factor test determinates how much of the variance can be explained by a single factor. If a single factor will account for the majority of variance in the model that would signify the presence of CMB issue. According to Schriesheim (1979) in order to run Haman's single factor test all the variables of the study (except the previously extracted items M3, M13, M16, S3, S4, S5, S6, P1, P6, and P7) were loaded into EFA, the number of factors extracted in EFA was constrained to be just one, after that unrotated factor solution was examined (Appendix R). The single factor accounted just for 25.81% of the variance what is considerably less than a half and therefore cannot be considered majority. Therefore, CMB is not an issue for this data.

In order to check the received results CLF method (controlling for the effects of a single unmeasured latent method factor) was applied. CLF in this case identifies the common variance in the model among all the observed items. To conduct this test a latent factor (CLF-factor) was added to the CFA model, after what it was connected with all the observed variables in the model (Podsakoff et al., 2003). Once it was done, the standardized regression weights (SRW) of both models (with and without CLF-factor) were compared (Appendix S). Since the differences between the SRWs for two models don't exceed the threshold of 0.2 (Dixon, Boland, Perelli, Weeks, and Gaskin, 2014), the

measurement model is not significantly affected by CMB. Moreover, the greatest difference that is noticed is between “Motivation” and “Demotivation”, which is -.023, while all the other values are lower than .014. Thus, there is no CMB for the observed data and therefore there is no need to retain the CLF.

3.2.1.7 Composites imputation. 12 new composites (“Satisfaction”, “Accuracy”, “Procedural”, “Distributive”, “Interactional”, “Motivation”, “Demotivation”, “External”, “Introjected”, “Identified”, “Integrated”, and “Intrinsic”) were imputed from the factor scores. For this purpose the function “Analyze”→”Data imputation” in AMOS was used. It should be mentioned that since “Motivation” is a second-order factor, it represents an appropriate factorial structure regarding all the first-order factors that form it. And therefore there is no need in using these six first-order factors (“Demotivation”, “External”, “Introjected”, “Identified”, “Integrated”, and “Intrinsic”) in path analysis. It should be mentioned that in order to avoid negative values for “Motivation” the variance of “External” (instead of “Demotivation”) was set to one.

3.2.2 Exploratory factor analysis. EFA in this study is conducted out of due diligence. This statistical approach is used in order to confirm the established in CFA correlations among items in the dataset. EFA provides the factor structure with no concerns to prior theory about the variables’ belonging to the set constructs.

3.2.2.1 Data appropriateness. The appropriateness of data (its adequacy) for factor analysis was evaluated through the “Bartlett Test of Sphericity” (BTS) and the “Kaiser-Meyer Olkin Measure of Sampling Adequacy” (KMO). BTS in this case estimates whether the sub-scales in the overall scale are inter-independent. Otherwise speaking it tests the null hypothesis, which states that original correlation matrix is identity matrix (Kaiser, 1974). For the appropriateness of factor analysis Bartlett’s test should be significant (where p value should be less than .05) what would mean that R -matrix is not an identity matrix and there are relationships between variables. KMO in its turn measures the sufficiency of the sample. Its values vary from 0 to 1, where those that are closer to 0 indicate the inappropriateness of factor analysis while high values present its distinction and validity. According to Kaiser (1974) values that are higher than .50 can

be considered acceptable. Moreover, Hutcheson and Sofroniou (1999) divide them into mediocre (from .50 to .70), good (from .70 to .80), great (from .80 to .90), and superb (from .90 and above). For the data of this study KMO is .856. This index is of great reliability and indicates that factor analysis should execute reliable factors. Since the level of statistical significance (ρ) in Bartlett's test is less than .05 for Approx. Chi-Square equal 3241.978, the null hypothesis is rejected, and therefore the relationships between variables can be asserted. Moreover, in this case ρ is less than .01, what testifies that Bartlett's test is highly significant.

3.2.2.2 Factor structure. In order to clearly differentiate factor loadings Oblique Promax rotation was chosen. The advantage of this type is that the variables are evaluated for the distinctive relationship between each factor and item, at the same time removing the relationships that are common for different factors. What concerns the factoring method, Principal Axis Factoring (PAF) was selected. PAF is preferable method in comparison with Principal Component Analysis (PCA) since it accounts for co-variation, while PCA accounts just for total variance. Among other advantages of PAF is that it considers only common variance and seeks the least number of factors that account for correlation of a set of items. In order to determinate the number of factors that should be kept, two different approaches was used:

- The eigenvalue criterion which should be 1 or higher (Kaiser, 1960). It represents each linear factor before extraction, after extraction, and after rotation. Hair, Black, Babin, Anderson, and Tatham (2006) also determinate a commonly accepted level of cumulative variance for social sciences, which is 60%;
- The scree plot. It allows finding the point of inflexion on the curve and therefore determinate the number of factors;

The acceptance of the model is premised on Field's, (2005) criteria, which are:

- The condition of variable inclusion in the cluster of factor is its loading to it to the extent of .50 and higher;
- Loading to other factors should be less than .40;
- The occurrence of two or more variables for each factor is a must.

PAF for the observed data distinguished seven components with eigenvalues of 9.079, 4.070, 2.098, 1.642, 1.098, 0.988, and 0.736 (Appendix T). The factor allocation is based upon eigenvalues and cumulative variance. All the while extracted amount of components doesn't correspond to theoretical assumption (there should be six of them). The eigenvalues for the sixth and seventh factor are 0.988 and 0.746, correspondingly, what according to Kaiser (1960) doesn't allow allocating them. At the same time Kaiser's eigenvalue minimum can be neglected should the necessary amount of components are clearly distinguished on the scree plot. Having a squint at the scree plot (Figure 3.1), there are six obvious factors that can be extracted. The seventh component can theoretically be distinguished since in the scree plot analysis the eigenvalues level off beginning from this variable.

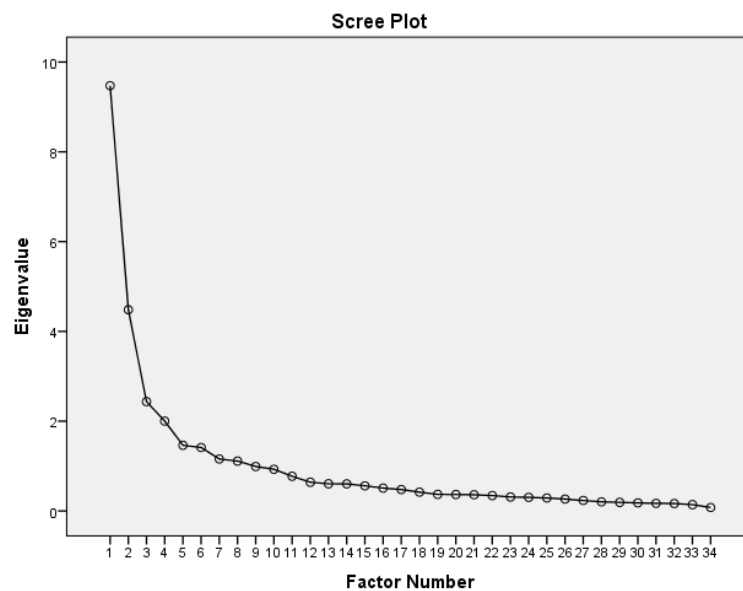


Figure 3.1. Scree plot for eigenvalues.

It should be mentioned as well that the initial total eigenvalue for the sixth and the seventh factors are 1.413 and 1.157, while total rotation sums of squared loadings is 4.632 and 1.639, correspondingly. The final decision concerning retaining or removing of these two factors will be based on the factors' face validity.

3.2.2.3 Face validity. The main idea of this test is to determinate whether the factor structure makes sense (similar in nature items should load on the same factors; if there are any exceptions, they should be explainable, etc.). Thus, according to the Pattern Matrix (Appendix U) seven factors were distinguished. The first factor consists of items M1, M4, M5, M6, M7, M8, M10, M11, M14, M15, and M18. These variables represent four sub-scales (“Introjected”, “Identified”, “Integrated”, and “Intrinsic”) of WEIMS. The two sub-scales, which represent the forms with no motivation (“Demotivation”) and with the most controlled form of motivation (“External”), are not represented in the first factor. At the same time, they form separately distinguished factors. Thus, the fifth factor represents external regulation (M2, M9), while the seventh factor represents demotivation (M12, M17). Since all the variables of WEIMS were logically separated into three factors that are explainable, all of them can be kept. That also concerns the seventh factor with the eigenvalue less than 1 (it is retained).

The third, the fourth, and the sixth factors represent the scales of interactional, distributive, and procedural fairness, correspondingly. A special attention should be given to the sixth factor. It is loaded with four items (P2, P3, P4, and P5) and therefore represents the procedural fairness. Even though its eigenvalue (0.988) a little bit less than the established threshold, this factor should be retained. The only issue that is noticed in the factor structure concerns the second factor. Thus, four items of accuracy (A1, A2, A3, and A4) and three items of satisfaction (S1, S2, and S7) form it. Since the presence of DV and CV in “Satisfaction” was mentioned in CFA, and all the items of “Satisfaction” scale are loaded on the second factor much weaker compare to the variables of “Accuracy” (the loading of items S1 is even lower than the threshold of .50), this structure can be retained.

Seven distinguished components explain around 58% of the total variance, what is by 2% lower than the threshold of 60% for social science, but still can be considered acceptable. The first factor explains 26.70% of variances, second – 11.97%, third – 6.17%, fourth – 4.83%, the fifth – 3.23%, the sixth – 2.91%, and the seventh – 2.16% (Appendix T). It’s worth noting that after the components’ optimization they are equalized and account relatively the same variances, which are 6.27%, 6.68%, 4.65%, 4.84%, 2.81%, 4.63%, and 1.64% correspondingly (column “Rotation sums of squared loadings” of Appendix T).

3.2.2.4 Convergent validity. CV in EFA means that items within a single component are highly correlated. That can be seen through the factor loadings, which according to Hair et al. (1998) should be at the level .40-.45 for the sample size of 150-200. Loadings that are below the established threshold are insufficient, while those that are at this level or above – significant. At the same time regardless of the sample size it is recommended to have loadings higher than .50. For the distinguished factors just three variables have the loadings below .50 (S1, P2, and P5). Items P2 and P5 represent procedural fairness and their loadings are .405 for both. The issue with procedural fairness took place in CFA and has been solved (AVE for “Procedural” was .513, what is slightly above the threshold of .50). For EFA the loadings of P2 and P5 are within the threshold of .40-.45. These values were expectable since AVE for this factor is also really close to the threshold. All in all, the loadings for P2 and P5 can be considered acceptable. The only item of “Satisfaction” (S1) has the loading .488, which can be considered satisfactory for the provided sample size.

3.2.2.5 Discriminant validity. DV in EFA refers to the level to which components are uncorrelated and distinct. Items should relate to their parent factor much stronger than to other factors. In factor correlation matrix (Table 3.2) the correlations between factors shouldn’t exceed the threshold value for multicollinearity, which is .70 (Heinecke, 2011). All the correlations are in the range from .097 to .472, what signifies that there is no majority of shared variance in between them.

Table 3.2

Factor Correlation Matrix

Factor	1	2	3	4	5	6	7
1	1						
2	.340	1					
3	.161	.410	1				
4	.103	.472	.255	1			
5	.260	.229	.235	.210	1		
6	.298	.460	.368	.436	.336	1	
7	.207	.141	.157	.097	.127	.110	1

Note. Extraction method: Principal Axis Factoring. Rotation method: Promax with Kaiser Normalization.

Another important method to determine DV during EFA is to examine the pattern matrix. Items should be significantly loaded just on one factor, without the “cross-loadings” that differ more than by .20. Thus, there are no items that have significant cross-loadings (Appendix U) and therefore there are no issues with DV.

3.2.2.6 Communalities. In order to determine any items that should be excluded from the factor solution, a special attention is given to variables’ communalities. Communalities represent the common variance in the data layout and significantly contribute to the factorial model, especially those with high communality (h^2). Meanwhile, if the variable’s communality is low (less than .50), it testifies that factors contain less than 50% of the variance in the original item and therefore variable can be excluded from the factor analysis (Frees, Derrig, & Meyers, 2014). At the same time for social sciences the communalities can be as low as .30 (Tabachnick & Fidell, 2007). For this study all the communalities are in the range between .306 and .946 (Appendix V), and therefore there are no issues with communalities. It should be mentioned that items M1, M4, M6, M7, M10, M15, M17, S1, S2, and S7 have the communalities that are lower than .50. It is explainable since items of “Satisfaction” are loaded on the factor of “Accuracy”, and items of “Motivation” represent its different forms.

3.2.2.7 Reliability. According to Cronbach (1984) it is possible to evaluate the reliability of the data (otherwise speaking its internal consistency) by Cronbach’s α , which is in compliance with Nunnally (1978) and Anastasiadou (2006) supposed to be one of the most important coefficients of reliability that doesn’t depend on the arrangement of variables. This coefficient is based on included in the scale items and their correlations. Moreover, the reliability of instrument that is measured by alpha determines the level to which attained results are instantiated by retentiveness and not aligned with measurement errors. Kline (1999) suggests that acceptable value for Cronbach’s α is .70 and higher, what makes it possible to infer that the scale is reliable. In this case to determine the value of Cronbach’s α , the “Reliability Analysis” in SPSS 21.0 was conducted. Moreover, using the function “Scale if item deleted” Cronbach’s α

for each item of the scale was defined in order to be convinced that no item causes a significant decrease in the overall Cronbach's α . The results are presented in Table 3.3.

Table 3.3

Reliability Analyses Results

Scale	α	α based on standardized items	N
Overall model	.900	.905	34
Motivation	.824	.834	15
Procedural	.807	.807	4
Distributive	.888	.889	4
Interactional	.897	.900	4
Satisfaction	.709	.715	3
Accuracy	.906	.907	4

Note. N = number of items. α = Cronbach's alpha.

As it can be seen from the Table 3.3, the Cronbach's alpha for all the scales is above the established threshold of .70, what signifies about their good internal consistency. The values of Cronbach's alpha based on standardized items is just faintly higher than the Cronbach's alphas themselves (the differences don't exceed .01), therefore the expansion in the number of variables for each scale will insignificantly increase the Cronbach's alpha (not more than by .01). Thus, there is no need in quantity input of new variables. It should be mentioned that the scales of "Accuracy" and "Overall model" have the best reliability coefficients (.906 and .900, correspondingly), which exceed the level of .90 and indicate extra good value. The worst reliability index among all the scales is at "Satisfaction" (.709), which is still higher than the threshold. The coefficients for all the other scales are in the range between .807 and .897. Consequently, all the scales consistently repeat the constructs that they measure.

3.3 Assumptions

In order to confirm the validity of the results five assumptions should have been satisfied since they are underlying the regression models. These assumptions can be summarized as follows:

- Linearity: a linear relationship between the observed variables;
- Homoscedasticity: constant variance of the random errors;
- Independence: independence of the random errors;
- Normality: normality of the random errors;
- No multicollinearity: absence of the high level of intercorrelations among independent variables.

Gaol, Kadry, Taylor, and Li (2014) emphasized their attention on normality, linearity, and multicollinearity, while Freund, Vilson, and Sa (2006) pointed out the importance of tests for independence and homoscedasticity. It's worth noting that checking the data for assumptions after the conducted EFA and CFA is explainable by many reasons. First of all, these tests precede the path analysis, and therefore it is acceptable to conduct them after or before the CFA and EFA. What is more important is that the data that is used for verification of assumptions (compute variables) is updated (with exception of excluded items M3, M13, M16, P1, P6, P7, S3, S4, S5, and S6) and therefore provides more reliable results.

Each of the above mentioned assumptions has been considered, since the violation of any of them may significantly impact the interpretation of obtained results. Thus, the first assumption of linearity states that there is an approximate straight relationship between two continuous variables (Rovai, Baker, & Ponton, 2014). It is necessary to know if the relationship between variables follows the linear trend so they can be analyzed by the means of linear regression analysis. Moreover, the violation of this assumption may understate the relationship between items. It was chosen to conduct a curve-linear regression (so called "curve-estimation" method) for all the relationships in the original model in order to check the data on linearity. As it can be seen from Appendix W almost all the relationships are sufficiently linear to be tested using AMOS, since they are significant at 5% level. The only exception is in the relationship "Interactional"→"Motivation", which significance is .070. Despite of the fact that this value is close to the threshold of .50, it is still insignificant and therefore can be considered to be a limitation of this study.

The second assumption of homoscedasticity means that all pairwise combinations of items have equal variances and normally distributed. Otherwise speaking one item

presents alike amounts of variance within the limits of a second item. In this case homoscedasticity is evaluated with scatter plot for the pairs of items (the variance of one item shouldn't be the same for all values of the second one). In order to check the data of the model for homoscedasticity in linear regression command of SPSS ("Plot" section) the standardized residuals "ZRESID" on vertical axes and the standardized predicted values "ZPRED" for dependent variable on horizontal axes were chosen (Crown, 1998). The scatter plots with the fit lines are represented in Appendix X. Almost none of them creates an apparent cone-like shape which is often corresponds to heteroscedasticity (the inverse of homoscedasticity) and the relationship between items is mostly pretty erratic. Moreover, the scatter plots satisfy the linear assumption of Ary, Jacobs, Razavieh, and Sorensen (2010), since the fit lines for all of them is very flat and most of the dots are near them. The only potential heteroscedasticity is observed in the pairs of "Accuracy"←"Interactional" and "Accuracy"←"Satisfaction", which can be considered as limitation for this study. In all the other relationships it is possible to confirm the absence of heteroscedasticity.

The third assumption of independence of observations (i.e. absence of autocorrelation) signifies that multiple observations are not applied in accordance with outside effect. It should be mentioned that according to Stevens (2002) violation of this assumption may substantially impact the level of significance and statistical power of the test. Independence in this study is evaluated by Durbin-Watson test. This test uses studentized residuals in order to estimate the assumption that the residuals from linear regression are independent. According to Hanushek and Jackson (1977) the value of the test (d) may vary from 0 to 4. Values that are close to 0 designate the presence of high positive autocorrelation, while those close to 4 signify extreme negative autocorrelation. Values that are close to 2 indicate the absence or really low autocorrelation. The table with all the values is presented in Appendix Y. For these data d varies from 1.874 up to 2.114, what is a perfect coefficient signifying that the measurement of one variable is not influenced by another or any outside impact for every single case.

The fourth assumption of normality considers whether the data was normally distributed or it was spread evenly. It ought to be mentioned that violation of normal distribution may both affect the significance of the test and skew the relationship between

items. Since there is no clear consensus regarding normality for specific parametric tests in SPSS (Kolmogorov-Smirnov, Shapiro-Wilk W test, etc.), it was chosen to evaluate normality through the graphical method, i.e. probability-probability (P-P) plot (Rovai et al., 2014). This method was chosen because of Field's (2009) suggestion of using visual tests in order to evaluate normal distribution for the sample sizes of 150 and greater. According to Berkman and Reise (2012) close arrangement of points on the scatter plot along the line speaks for the normal distribution of the observed data. Since most of the points fall inside the limits of the lines (while some of them are a little bit skewed on the right or on the left, but these skews are really insignificant) the data can be considered to be normally distributed (Appendix Z).

Finally, the assumption of the absence of multicollinearity states that there are no excessively high correlations between predictor variables. If this assumption is not met the regression coefficients for each item wouldn't be reliable and therefore their impact on the outcome will be indistinguishable (Ung, 2009). It happens because the intercorrelations between independent variables are so high that their effects cannot be separated. Multicollinearity also affects the significance of the test since it increases the standard errors and decreases the accuracy of the coefficient estimates. Gaol et al. (2014) suggest using collinearity diagnostic test in order to examine the possibility of presence of multicollinearity issues in the model. For this purpose variance of inflation factors (VIF) should be used. This procedure, according to Hair et al. (2010) allows distinguishing acceptable values of collinearity for analysis of regression. Belsley, Kuh, and Welsch (1980) as well as Hair et al. (2010) established the threshold for VIF, which shouldn't exceed 10. At the same time they suggest using the tolerance value (TV) that should be greater than .10. It should be mentioned that the thresholds for VIF and TV vary in different sources: Acton, Miller, Maltby, and Fullerton (2009) suggest using $VIF < 10$ and $TV > .40$ in order to avoid multicollinearity; Field (2000) established the thresholds for $VIF < 10$ and for $TV > .20$; while Walker and Maddan (2013) accept VIF that is not greater than 5. Thus, taking into consideration all the thresholds it was decided to use the next ranges: $VIF < 10$, and $TV > .10$. Five variables ("Accuracy", "Satisfaction", "Procedural", "Interactional", "Distributive") that serve as independent variables in different cases (while "Motivation" is a dependent variable) were sequential used as

dependent while all the others were used as independent in linear regression analysis. The results of collinear diagnostics for the current model are represented in Appendix AA. The VIF values in all the cases are way below 10. Moreover, they can be considered acceptable even at the $VIF < 5$ level. What concerns TV, they are all greater than the .10, and almost all of them are greater than .20. Thus, it can be concluded that there are no severe problems with multicollinearity.

3.4 Correlation Analysis

In order to establish the relationships between variables bivariate correlation analysis was conducted. Pearson correlation (r) was chosen for this purpose since it is best suited for the data of the study and helps to determinate the strengths and directions of the association between items. According to George et al. (2013) four assumptions have to be satisfied prior to carrying out the analysis, which are:

- Variables should be continuous;
- Presence of linear relationship between items;
- Absence or limited amount of significant outliers;
- Normal distribution of variables.

To one extent or another each of these assumptions can be considered satisfied. Foremost, the original ordinal data was computed through the agency of the “Data imputation” function in AMOS 22.0 and as a result each variable assumed a different value. That confirms the occurrence of continuous level of measurement between all the items and therefore first assumption is satisfied. The presence of linear relationship between variables was previously confirmed (Appendix W). In the meantime not all the assumptions should be 100% satisfied since we face the real-world data rather than examples from the textbooks (Rubin, 1986). The third assumption regarding outliers was studied with the scatter plots. George et al. (2013) claims that these extreme scores may have a considerable effect on correlation. Despite of the fact that some of the outliers were distinguished, they didn’t significantly impact on the overall result and therefore were kept. Finally, the normal distribution of the data was explored with probability-probability plots earlier (Appendix Z). Suchwise, all the assumptions were satisfied and Pearson correlation analysis can be applied.

Cohen (1969) firstly introduced the specific criteria for categorizing the magnitude of linear relationship and divided them into weak, moderate, and strong. According to his often-cited publication the correlational values for Pearson approximately equal to $r = \pm.10$ are considered weak; $r = \pm.30$ are considered moderate; and $r = \pm.50$ are considered strong (Cohen, 1988). Weinberg and Abramowitz (2002) confirmed the dispensation and wide usage of this scale as well as its appliance for behavior science. Suchwise, this classification will be used for correlation analysis.

Among the three commonly used significance levels (i.e., .01 – highly significant; .05 – significant; and .10 – moderately significant) the one of 5% ($\alpha=.05$) was selected for this study. In order to avoid *Type I* error (i.e., incorrectly rejecting the null hypothesis when it is true) the significance level of .10 was rejected. At the same time in case of $\alpha=.01$ *Type II* error may occur (i.e., failing to reject H_0 when it is falls) and thereby significance level of 1% was denied as well. Moreover, the sample size of 161 respondents has a higher sample error than those that are bigger and therefore enhances the possibility of *Type II* error. Finally, according to Burke and Christensen (2014) the significance level of .50 is a widespread convention among researchers in education and every other social and behavioral science.

Since all the proposed hypotheses state that there is a relationship between variables, all the null hypotheses would claim that there is no relationship between them. Thus, according to Matthews (1981) statistical test in this case involves an unqualified hypothesis of “no difference” (or “no effect”) and therefore the critical region of rejection the H_0 should include both ends (tails) of the sampling distribution. That signifies that the two-tailed test of significance should be used in this study.

The Pearson’s correlation test is applied for this study in order to reject or not reject the null hypotheses in favor of each of the proposed hypotheses (Table 1.3). Thus, hypothesis 1a (H_{1a}) states that there is a significant positive impact of distributive fairness on employees’ motivation. In this case the null hypotheses (H_{01a}) would expose that there is no relationship between distributive fairness and employees motivation (the statement is made considering selected for this study two-tailed test of significance). If the ρ value for correlation between distributive fairness and employees’ motivation is lower than the chosen level of significance (which is .50) that would mean that H_{01a} is rejected in favor

of H_{1a}. It should be mentioned that neither the null hypotheses nor proposed hypotheses would be fully rejected. What will be done is the rejection of one of them in favor of the other. That is done for the purpose of avoiding *Type I* and *Type II* errors. Moreover, since *Type I* error is often considered to be more serious than *Type II* error (Davis & Pecar, 2013) all the correlations will be double checked with significance level of 1% so as to avoid it. In this case the probability of this type of error will be just 1%. Thus, the null hypotheses (H_{01a}, H_{01b}, H_{01c}, H_{02a}, H_{02b}, H_{02c}, H_{03a}, H_{03b}, H_{03c}, H₀₄, H₀₅, and H₀₆) which state that there is no relationship between items for each of the proposed hypotheses is set and going to be tested in correlational analysis.

The results (Appendix AB) found that the overall employees' motivation has strong positive correlations with almost all the elements that compose it. Moreover, the strongest correlations are educed in moderately controlled ($r=.972$, $\rho<.01$) and moderately autonomous ($r=.979$, $\rho<.01$) forms of motivation that segue towards intrinsic motivation ($r=.939$, $\rho<.01$) and integrated regulation ($r=.906$, $\rho<.01$). The most controlled form of motivation (external regulation) is less correlated with overall motivation than any other form of extrinsic motivation ($r=.375$, $\rho<.01$). Finally, demotivation has predictable negative correlation with overall motivation ($r=-.419$, $\rho<.01$). For all the elements included in the overall motivation the probability values are less than 1%.

All the components of perceived fairness (interactional, procedural, and distributive) have moderate to strong correlations with both perceived accuracy (r ranges from .497 to .684 with the probability values of less than 1%) and satisfaction with performance appraisal (r ranges from .466 to .688 with the probability values of less than 1%). Since all the correlations are significant at 99% confidence level H_{02a}, H_{02b}, H_{02c}, H_{03a}, H_{03b}, and H_{03c} can be rejected in favor of the stated in Table 1.3 hypotheses. What concerns the interrelations of the elements of perceived fairness with the overall motivation, they are at weak to moderate level: $r=.143$, $\rho>.05$ for interactional fairness; $r=.235$, $\rho<.01$ for distributive fairness; and $r=.435$, $\rho<.01$ for procedural fairness. In this case H_{01a} and H_{01b} can also be rejected in favor of originally stated hypotheses since for both of them probability values are less than 1% as well. What concerns H_{01c} it cannot be rejected in favor of H_{1c} ($r=.143$, $\rho>.05$) since there is not enough evidence available to suggest the null hypothesis is false at the 95% confidence level ($\rho=.070$).

Perceived accuracy has the greatest interrelations with the satisfaction with performance appraisal ($r=.887$, $\rho<.01$) and therefore hypothesis H_{04} can be rejected in favor of H_4 . The interrelations between perceived accuracy and overall motivation are not as strong as it was expected $r=.406$, $\rho<.01$, but still at the moderate level, what allows rejecting H_{05} . What concerns satisfaction with performance appraisal despite of its high correlation with perceived accuracy and moderate to high relationships with all the components of perceived fairness, it is moderately correlated with the overall motivation ($r=.460$, $\rho<.01$). So, H_{06} is also rejected.

Interactional fairness has really weak correlations with the overall motivation and each element included in it (r ranges from .101 to .184). Moreover, its interrelations with integrated, identified, introjected, external regulation, and overall motivation are insignificant at 5% level (ρ is .202, .077, .151, .056, and .070, correspondingly).

Hence, through the agency of the bivariate correlation analysis all the null hypotheses but one (H_{01c}) were rejected in favor of the originally proposed hypotheses. The summary table is represented in Appendix AC. What concerns H_{01c} , it wasn't found enough evidence that the null hypothesis is false for $\alpha=.05$, and therefore H_{1c} was rejected in favor of H_{01c} . The strongest correlations (beside those between the components and the overall value of motivation) were established between perceived accuracy, satisfaction with performance appraisal, and the components of perceived fairness, what is indicative of interrelations between these elements in the theoretical model (Figure 1.17). What concerns the correlations of abovementioned elements with overall motivation, they are at much lower level than it was expected. At the same time all the correlations with the overall motivation (r ranges from .235 to .460, $\rho<.01$ with the exception of interactional fairness where $r=.143$, $\rho>.05$) are at low to mediate level, while the probability values are less than the chosen α of .50.

3.5 Path Analysis

Path analysis was used in this study in order to test the set hypotheses. This method, according to Loehlin (1997), examines the relationships between all the items and tests the underlying models with multiple items included in the theoretical framework. What is more important is that the primary goal of path analysis, according to

Huang, Thornhill, Shah, and Shook (2002), is to provide credible explanations of observed interrelations by building models of cause and effect relations, what, eventually, allows answering the proposed hypotheses. Thus, earlier computed in CFA variables (“Motivation”, “Satisfaction”, “Accuracy”, “Procedural”, “Distributive”, and “Interactional”) were employed in AMOS 22.0. The resultant model is represented in Figure 3.2. This model is based on the theoretical framework and set for this study hypotheses.

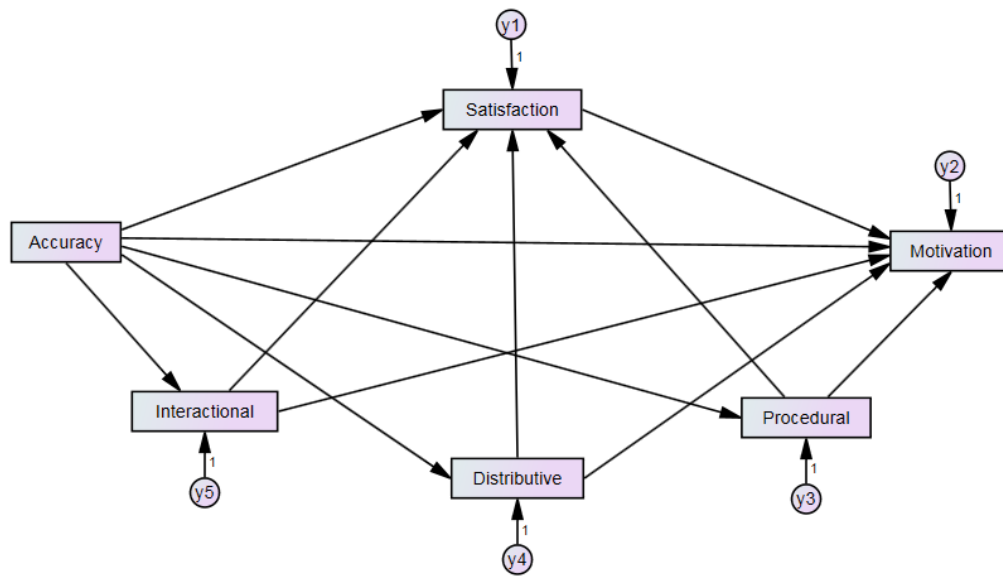


Figure 3.2. Path model of the impact of performance appraisal on employees’ motivation.

Prior to the conduction of analysis, the check for model fit was carried out. Thus, for this model the results are: CMIN/DF=33.191, GFI=.858, AFGI=.003, PGFI=.123, CFI=.844, RMSEA=.449, PCLOSE=.000. As it can be noticed, the model fit is inappropriate and therefore changes should be done. First of all, we refer to modification indices. For the specified model the greatest covariance is between y4 and y3, which is $cov_{(y4, y3)}=54.021$. In order to increase the model fit these two error terms (y4 and y3) were covaried. That increased the model fit: CMIN/DF=16.833, GFI=.941, AFGI=.375, PGFI=.090, CFI=.949, RMSEA=.315, PCLOSE=.000, but at the same time the overall fit is still not acceptable. Another significant covariation is observed between items y5 and y3, which is $cov_{(y5, y3)}=29.422$. After these two errors were covaried the model fit increased suggestively. Thus, CMIN/DF=.940, GFI=.998, AFGI=.959, PGFI=.048,

CFI=1.000, RMSEA=.000, PCLOSE=.423, and even $\rho=.332$. Such an excellent fit to the data can be explained by the fact that the $\chi^2=.940$ for this model is less than the number of degrees of freedom ($df=1$). In this case Keith (2015) suggests adding control variables in order to assure that the model doesn't change significantly. For this purpose control variables age and gender were randomly added to the model (Appendix AD). Age was connected with "Satisfaction" and gender with "Motivation". The resultant model fit didn't change suggestively, CMIN/DF=1.056, GFI=.980, AFGI=.941, PGFI=.327, CFI=.999, RMSEA=.019, PCLOSE=.710, $\rho=.393$. That signifies that there is a good model fit and we can proceed to the path analysis.

Nachmias and Nachmias (1996) suggest firstly estimate the path coefficients using regression techniques in order to prove or reject the set hypotheses and after determine indirect and total effects (so as to establish the presence of mediation). Thus, we will adhere to this sequence.

The first hypothesis states that there is a significant positive impact of distributive fairness on employees' motivation. Standardized regression weight (SRW) and estimated regression weight (ERW) indicate that when the factor increases by one standard deviation (or by one), the corresponding item increases by SRW or ERW (Sage, 2006). For H_{1a} when "Distributive" factor increases by one standard deviation, "Motivation" decreases by .197 standard deviations. That indicates the presence of negative relationship between these two items (SRW=-.197, ERW=-.058). The significance value ($\rho=.047$) is barely less than the determined 5% level, but greater than 1% level. Since ρ is lower than the established threshold of .50, the path coefficient and so relationship between "Motivation" and "Distributive" can be considered significant. The coefficient of determination (R^2) is .039 (Table 3.4). This implies that just about 4% of the variation in overall motivation data is explained by distributive fairness. According to Chin (1998) the values of R^2 can be differentiated into four groups depending on the level of their explanatory power: weak (.19 and less), moderate (from .19 to .33), substantial (from .33 to .67), and strong (.67 and higher). Thus, the coefficient of determination for this case can be considered weak since distributive fairness accounts just for 3.9% of variance in the overall motivation. Critical ratio (C.R.), according to Khine (2013), shows the t 's (the statistical significance of the relationship between the independent and the dependent

variables) for each coefficient. These values actually represent the z statistics, but they are approximately normally distributed with larger samples (for $N=161$ as well). The significant coefficients should have $z \geq 1.96$ for $\rho \leq 0.5$ (Khine, 2013). In our case C.R. = -1.988 ($\rho=.047$), what is greater than the critical z value (at $\rho=.05$) of 1.96, and therefore the parameter is significant. Suchwise, for H_{1a} it was proved the presence of significant relationships between “Motivation” and “Distributive” ($r=.235$, $\rho<.05$); the existence of significant impact (even though it is negative and significance level is close to the threshold) of “Distributive” on “Motivation” (SRW=-.197, ERW=-.058, $\rho=.047$) with 3.9% of distributive fairness variance in the overall motivation; the occurrence of the statistical significant relationship between “Distributive” and “Motivation” (C.R.=-1.988, $\rho=.047$). What concerns H_{1a} , it should be rejected because of the presence of significant negative effect of “Distributive” on “Motivation” (H_{1a} stated the presence of significant positive impact). The summary for all the stated hypotheses is represented in Table 3.4.

Table 3.4

Model Estimates and Summary Decisions on Stated Hypotheses

H	Direction of impact	SRW	ERW	R^2	C.R.	ρ	Decision
H_{1a}	Motivation ← Distributive	-.197	-.058	.039	-1.988	.047	Rejected
H_{1b}	Motivation ← Procedural	.499	.188	.249	4.021	***	Confirmed
H_{1c}	Motivation ← Interactional	-.315	-.098	.099	-3.638	***	Rejected
H_{2a}	Satisfaction ← Distributive	-.104	-.069	.011	-2.092	.036	Rejected
H_{2b}	Satisfaction ← Procedural	.157	.132	.025	2.530	.011	Partially confirmed
H_{2c}	Satisfaction ← Interactional	.137	.095	.019	3.186	.001	Partially confirmed
H_{3a}	Distributive ← Accuracy	.537	.564	.288	8.047	***	Confirmed
H_{3b}	Procedural ← Accuracy	.689	.568	.474	12.029	***	Confirmed
H_{3c}	Interactional ← Accuracy	.497	.495	.247	7.244	***	Confirmed
H_4	Satisfaction ← Accuracy	.767	.531	.588	16.123	***	Confirmed
H_5	Motivation ← Accuracy	-.096	-.030	.009	-.637	.524	Rejected

H	Direction of impact	SRW	ERW	R ²	C.R.	ρ	Decision
H ₆	Motivation ← Satisfaction	.474	.212	.225	3.056	.002	Confirmed

Note. Values that affected the decisions to reject or partially reject hypotheses are in boldface. H = hypothesis. SRW = standardized regression weight. ERW = estimated regression weight. R² = coefficient of determination. C.R. = critical ratio. ρ = probability value. *** ρ < .001.

As it can be seen from the table hypotheses H_{2b} and H_{2c} were partially confirmed while H_{1a}, H_{1c}, H_{2a}, and H₅ were rejected. All the other hypotheses were fully confirmed. Hypotheses H_{2b} and H_{2c} were partially confirmed because for them R² is too weak (.025 and .019, correspondingly) and therefore the impact (even though it is significant) cannot consider to be sufficient. What concerns the rejected hypotheses H_{1a}, H_{1c}, and H_{2a} they were not confirmed because for them the negative significant relationship between the items was established, while the set hypotheses declared the presence of positive relationships. H₅ was rejected because of both the presence of negative significant relationship (while the originally stated hypothesis declared the presence of positive impact) and insignificant at 5% level ρ value.

The initial path analysis provides all the path coefficients without distinction of their meaningfulness or statistical significance. According to Donald (2008) insignificant path coefficients can be removed from the model in order to make it simpler and trim it. Thus, in the stated model there is just one coefficient that is insignificant at 5% level (between “Accuracy” and “Motivation”, ρ=.524). However, for now it is not going to be removed, because there are possibilities of indirect impact of “Accuracy” on “Motivation” as well as in between other items.

3.5.1 Mediation. Mediation models are used in this study in order to show the chains of causation and to provide more thorough and accurate explanation of causal effect of one item on another. There are three main types of mediation: partial, full, and indirect (VanderWeele, 2015). For partial mediation both direct and indirect effects of independent variable on the dependent one should be significant. Full mediation is characterized by the change of the significant direct effect to insignificant together with addition of mediator, while the indirect effect is still significant. Finally, indirect mediation occurs when the indirect effect is significant but the direct effect has never

been significant. It should be mentioned as well that there is a possibility of no mediation. No mediation is defined by insignificant indirect effects. Also no mediation occurs when the direct effect of independent variable on mediation is insignificant or when the direct effect from mediation to the dependent variable is insignificant.

According to Mathieu and Taylor (1996) there is no currently an excepted or agreed upon method for testing the models with two or more mediating variables. That is why in this study seven mediation effects (with just one mediating variable per each model) are going to be tested:

- “Accuracy” is mediated by “Satisfaction” to “Motivation” (ASM);
- “Accuracy” is mediated by “Distributive” to “Motivation” (ADM);
- “Accuracy” is mediated by “Interactional” to “Motivation” (AIM);
- “Accuracy” is mediated by “Procedural” to “Motivation” (APM);
- “Satisfaction” is mediating “Distributive” to “Motivation” (DSM);
- “Satisfaction” is mediating “Interactional” to “Motivation” (ISM);
- “Satisfaction” is mediating “Procedural” to “Motivation” (PSM).

Firstly, all the standardized direct effects (SDE) without mediation were determined (Table 3.5). Accomplish this for each separate case all the connections with mediators as well as items that impact the independent variables were removed. Thus, for ASM arrows to “Distributive”, “Interactional”, “Procedural”, and “Satisfaction” were removed; for DSM arrow to “Satisfaction” as well as arrow from “Accuracy” to “Distributive” were removed, etc. Once the direct effects without mediation were established the bootstrapping settings were set (number of bootstrap samples is 2000 and bias-corrected confidence level is 95). Bootstrapping procedure is used in AMOS 22.0 in order to evaluate the statistical significance of indirect and total effects (Keith, 2015). For each separate model SDE with mediation, standardized indirect effect (SIE), and their significance were established. For ASM arrows to all the mediators (“Distributive”, “Interactional”, and “Procedural”) but “Satisfaction” were removed, after what bootstrapping was carried out. A special attention should be given to DSM, ISM, and PSM. In order to avoid the impact of “Accuracy” on these models prior to bootstrapping the arrow from “Accuracy” to one of the observed items (“Distributive”, “Interactional”, or “Procedural”) was removed (the removal of the arrow depends on the explored

mediation model). The values of SDE with and without mediation, SDI, and their significance are represented in Table 3.5.

Table 3.5

Direct and Indirect Effects of Observed Mediation Models

	Direct effect without mediation		Direct effect with mediation		Indirect effect		Mediation type observed
	SDE	ρ	SDE	ρ	SIE	ρ	
ASM	-.093	.522	-.100	.604	.377	.001	Indirect mediation
ADM	-.093	.522	-.091	.595	-.040	.063	No mediation
AIM	-.093	.522	-.090	.601	-.056	.024	Indirect mediation
APM	-.093	.522	-.096	.595	.211	.001	Indirect mediation
DSM	-.200	.047	-.198	.103	-.050	.043	Full mediation
ISM	-.302	***	-.310	.002	.064	.002	Partial mediation
PSM	.511	***	.504	.001	.075	.008	Partial mediation

Note. SDE = standardized direct effect. SIE = standardized indirect effect. ρ = probability value. *** $\rho < .001$

As it can be seen from the table there is indirect mediation in ASM, AIM, and APM; partial mediation in ISM and PSM; full mediation is DSM; and no mediation in ADM. All of these effects will be thoroughly observed in the “Discussion” chapter.

Since the path coefficient between ”Accuracy” and “Motivation” is insignificant ($\rho=.524$) and all the direct effects with and without mediation (in ASM, ADM, AIM, and APM) are also insignificant, the path between these two items can be removed from the original path model. After the removal of the path the model fit remained excellent: CMIN/DF=.674, GFI=.997, AFGI=.971, PGFI=.095, CFI=1.000, RMSEA=.000, PCLOSE=.630, $\rho=.510$. All the path coefficients in the revised model demonstrate statistical significance at 5% level and all the C.R. are above the threshold of 1.96 (Appendix AE). The overall revised model with standardized estimates is represented in Figure 3.3.

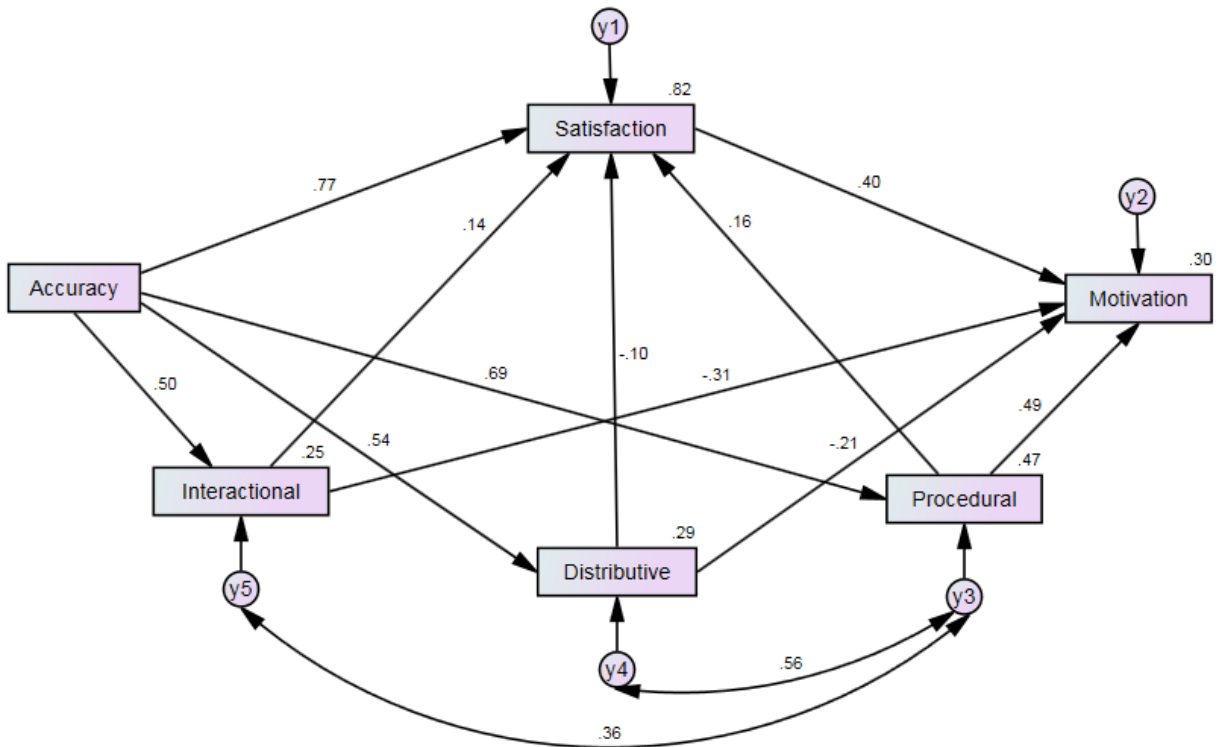


Figure 3.3. Revised path model of the impact of performance appraisal on employees' motivation with standardized estimates.

Squared multiple correlations estimated that the predictors of “Motivation” explained 30.5% of its variance, while the error variance accounted for approximately 69.5% ($1-R^2$). These values signify about moderate to substantial level of explanatory power of the predictors. R^2 for “Satisfaction” is 82%, which is way above the threshold of strong explanatory power. Finally, the values of R^2 for “Procedural”, “Distributive”, and “Interactional” are 47.5%, 28.8%, and 24.7%, correspondingly.

After the removal of path between “Accuracy” and “Motivation” all the hypotheses were double-checked. There were no significant changes that could substantially impact the decisions concerning stated hypotheses (Appendix AF). At the same time the ρ values as well as C.R. values for H_{1a} , H_{1b} , H_{1c} , and H_6 increased. SRW and ERW for H_{1a} and H_{1b} slightly decreased, while those for H_{1c} faintly increased. What concerns H_6 , the drop of SRW and ERW was quite significant (from .474 to .395 and from .212 to .177, correspondingly). None of the coefficients for other hypotheses have

been changed. Suchwise, all the conclusion concerning hypotheses' confirmations remain the same.

3.6 Summary

In order to confirm and validate the stated theoretical model CFA was conducted primarily. Since the initial model fit was inappropriate we referred to modification indices and SRC. After the error terms were covaried (e40 with e43) and items (M3, M13, M16, and S4) in SRC matrix with the biggest amount of SRCs that are greater than the threshold of 1.96 were removed, the model fit became acceptable (CMIN/DF=1.483, GFI=.762, AFGI=.728, PGFI= .667, CFI=.901, RMSEA=.055, PCLOSE=.122), what allowed to proceed to validity and reliability check. Validity tests showed significant issues with CV and DV in the factors of "Satisfaction", "Procedural", and "Accuracy". In order to increase DV and CV of items some manipulations have been done. Firstly, the item S5 (that had the highest cross-loading in EFA in between factors of "Satisfaction" and "Accuracy") was removed. That eliminated DV problem for "Accuracy" and highlighted the DV issue of "Satisfaction" (since in EFA almost all the items (except S3 and S6, which represent the reverse scoring) belonged to the first factor of "Accuracy"). Further manipulations resulted in the removal of items P1, P6, P7, S3 and S6, what solved almost all the issues with CV, DV, and CR. The only remained problem applied for CV and DV of "Satisfaction" ($AVE(.460) < .50$; $AVE(.460) < MSV(.634)$; and the square root of the AVE for "Satisfaction" (.678) was less than the absolute value of the correlations with "Accuracy" (.796)) and considered to be a limitation of this study. After that the model was examined for metric and configural invariance. All the tests were passed. As a result the factor structure of the model was validated and sufficient equivalence of the loadings across the groups was confirmed. Further, the data of the study was checked for CMB with Harman's single factor test and CLF method. In the first test the single factor accounted just for 25.81% of the variance, while in CLF test the differences between the SRWs for two models didn't exceed the threshold of 0.2. All of that signified about the absence of issues with CMB for the used in the study data. At the end of CFA 12 new composites were imputed from the factor scores.

In order to verify the established in CFA correlations among items in the dataset EFA was carried out. Prior to the factor analysis two acceptances were satisfied. Reliability of the sample sufficiency was confirmed by KMO (which was .856) and the rejection of the null hypothesis was supported by BTS (ρ was less than .05 for Approx. Chi-Square equal 3241.978). After that in SPSS 21.0 with PCA seven components with eigenvalues of 9.079, 4.070, 2.098, 1.642, 1.098, 0.988, and 0.736 were distinguished. Even though the extracted amount of components didn't correspond to theoretical assumption (there should have been six factors), the face validity of their allocation was affirmed. After that CV and DV of the data was double-checked in SPSS 21.0, which proved the presence of the only one issue with the factor of "Satisfaction". It should be noticed that this problem have been stated earlier in CFA. At the end of EFA reliability analysis for each scale as well as for the overall model were studied. Since the Cronbach's alpha for all of them was above the established threshold of .70, their internal consistency was upheld.

Once the CFA and EFA were carried out, the assumptions for linearity, homoscedasticity, independence of the random errors, normality, and multicollinearity were reviewed. All of them were passed with some remarks for linearity (the linear relationship of "Interactional" \rightarrow "Motivation" (which was .070) was not significant at 5% level) and homoscedasticity (potential heteroscedasticity was observed in the pairs of "Accuracy" \leftarrow "Interactional" and "Accuracy" \leftarrow "Satisfaction"). These issues can be considered to be the limitations of this study as well.

After that Pearson's correlation test was applied in order examine the null hypotheses. Thus, in bivariate correlation analysis all the null hypotheses but one (H_{01c}) were rejected in favor of the originally proposed. For H_{01c} it wasn't found enough evidence that the null hypothesis was false at 5% confidence level, and therefore H_{1c} was rejected in favor of H_{01c} . Once the relationships between variables were established and the null hypotheses were checked, the research hypotheses were tested using structural equation modeling procedure (path analysis). For this purpose computed in CFA variables were employed in AMOS 22.0 and formed the resultant model. Since the initial model fit was inappropriate (CMIN/DF=33.191, GFI=.858, AFGI=.003, PGFI=.123, CFI=.844, RMSEA=.449, PCLOSE=.000) some changes were done. The error terms (y_4

with y3; y5 with y3) were covaried, what increased the model fit significantly (CMIN/DF=.940, GFI=.998, AFGI=.959, PGFI=.048, CFI=1.000, RMSEA=.000, PCLOSE=.423, ρ =.332) and allowed to proceed to hypotheses testing. The decisions concerning hypotheses' rejection or acceptance was made on the basis of the model estimates (SRW, ERW, R^2 , C.R., ρ , r , etc.). As a result hypotheses H_{2b} and H_{2c} were partially confirmed while H_{1a}, H_{1c}, H_{2a}, and H₅ were rejected. All the other hypotheses were fully confirmed.

Once the hypotheses were verified, the indirect and total effects were determined in order to establish the presence of mediations. By applying bootstrapping procedure in AMOS 22.0 the next types of mediations in the model were elicited: indirect mediation in ASM, AIM, and APM; partial mediation in ISM and PSM; full mediation in DSM; and no mediation in ADM. Moreover, the path coefficient between "Accuracy" and "Motivation" was removed because of both its insignificance (ρ =.524) and the insignificance of direct effects with and without mediation (in ASM, ADM, AIM, and APM). That increased the overall model fit (CMIN/DF=.674, GFI=.997, AFGI=.971, PGFI=.095, CFI=1.000, RMSEA=.000, PCLOSE=.630, ρ =.510), but didn't change any parameters that could significantly impact on the decisions made upon the stated hypotheses. Suchwise, all the hypotheses were tested, mediations were observed, and the model fit was confirmed.

IV. Discussion

The analysis confirmed the validity of the proposed theoretical model. The relations between all the included variables in the model were examined. In order to answer the hypotheses, the underlying models with multiple variables included in theoretical framework were tested as well. The results supported the presence of positive interrelations between procedural justice and motivation, while the rest two elements of perceived fairness (i.e. distributive and interactional) were negatively related with the factor of motivation. The impact of distributive fairness on satisfaction wasn't supported in the path analysis. Moreover, H_{2b} and H_{2c} were just partially confirmed since the relations between the elements of perceived fairness and appraisal satisfaction were too weak. At the same time partial mediation was observed in ISM and PSM, and full mediation was detected in DSM models. The correlations of accuracy with each of the element of perceived fairness were fully upheld. Despite of the strong interrelations in between these items the presence of indirect mediation in AIM and APM was noticed. What concerns ADM, no mediation was observed for this relationship. The presence of significant interrelation in between accuracy and motivation wasn't supported in this study. At the same time the impact of accuracy on satisfaction as well as satisfaction on motivation was verified. In this case indirect mediation that was found in ASM model seems to be very logical. Hence, all the stated hypotheses were tested and sufficient evidences for their proof or disproof was found. In addition to the hypotheses testing so as to provide more thorough and accurate explanation of causal effect of one item on another, mediation effects were observed.

This chapter is organized in three sections. The first one is aimed at discussion of the results, their comparison to previous studies and the explanation of how the findings fit the observed in the literature review theories. A special attention is given here to results evaluation and interpretation respecting to the proposed research questions. The second part includes the limitations of the study and suggestions for the future researches. Finally, the importance and the relevance of the findings and their implications are discussed in the third section. Conclusion finishes the discussion chapter.

4.1 Discussion of the Results

The primary objective of this study was to examine the impact of performance appraisal and its constituent elements (perceived accuracy, satisfaction with performance appraisal, procedural, distributive, and interactional fairness) on employees' motivation. Further, the mediating role of satisfaction with performance appraisal and each element of perceived fairness were studied as well. To properly address these objectives, the study sought to determine, in the first place, the validity of the proposed theoretical model. Results showed that the model was valid (it also met all the criteria of linearity, homoscedasticity, independence, normality, and multicollinearity). Prior to checking the hypotheses it was verified that the statistical model fitted, to an adequate degree, to the set of observation. Thus, the model fit indices confirmed that the proposed factor structure model accounted relatively well for the correlations between items in the dataset. Once all the necessary information to grant significant results was received, the proposed hypotheses have been tested using AMOS 22.0 and SPSS 21.0.

This research supported the hypotheses that perceived accuracy is related to all the studied elements of perceived fairness. Thus, it was found that perceived accuracy positively affects procedural, interactional, and distributive justice. These findings completely fit observed in the literature review theories of relationship between perceived accuracy and distributive (Narcisse & Harcourt, 2008), procedural (Taylor et al., 1995), and interactional (Roberson & Stewart, 2006) fairness. Moreover, in the broad context, obtained results provide the support for existing research of interrelations between appraisal accuracy and appraisal fairness by Taylor et al. (1995).

The presence of relationship between perceived accuracy and procedural fairness may signify that participants perceive accurate organizational procedures as fairer comparing to those which are inaccurate. That complies with Leventhal's (1980) study, according to which procedural fairness is perceived fairer when the decisions are based on accurate information. This attitude to accuracy also applies to organizational processes that are used in selection, promotion, dismissal, and decision making. It means when employees perceive the performance appraisal processes consequences (as firing, evaluating, promoting, etc.) as accurate and in accordance with organizational policies, their perception of the fairness of those processes increases. Moreover, from employees'

perspective this result denotes a better acceptance of performance appraisal system (in terms of fairness). Thus, accuracy both based on adopted organizational procedures and on information decisions may significantly impact the participants' perception of procedural fairness, since this data may ensure rates whether the decisions and evaluations have been based on accurate, objective, and non-biased information or not.

Perceived accuracy is also found to have a significant positive effect on distributive fairness. It is possible that when respondents perceive their appraisals to be accurate, they form a positive attitude towards distributive fairness. In performance appraisal context it might signify that employees, who perceived that the ratings, received during the performance appraisal, reflected their actual performance (were accurate), would apprehend those ratings as fair. Since distributive fairness refers to the outcomes allocation (Greenberg, 1986), the ratings accuracy might increase participants' perception of the fairness of performance appraisal results' disposal and its implications towards the fulfilled tasks or completed work. In other words, employees might be more likely to perceive the fairness of the received bonuses, salaries, wages, or any other reward (in comparison with other employees or with established policies) when they apprehend that they have been evaluated accurately during the performance appraisal process. Thus, perceived accuracy might impact respondents' judgement concerning the fairness of rewards distribution and its match to the appropriate established norms, what fully complies with Leventhal's (1976) study.

The findings also supported the hypothesis H_{3c}, which states that perceived accuracy positively affects interactional fairness. It is likely that since interactional fairness is based on the relationships between the companies employees (Greenberg, 2006), accuracy of provided by the organizations information and accuracy of supervisors' abidance to the established rules of communication might have affected the participants' perception of interactional fairness. This might indicate that when employees perceive they are treated during the performance appraisal the same as other employees and according to the established norms they are more likely to accept those norms of interaction and perceive them as fair. Therefore, the presence of positive relationship between perceived accuracy and interactional fairness may signify that more accurate compliance with provided by organizations directions might increase the

dignity, propriety, respect, and truthfulness of interpersonal communications between ratees and supervisors.

Consequently, the research confirmed the theories of interrelations between perceived accuracy and procedural, distributive, and interactional fairness described in literature review. The findings are fully aligned with previous studies of Leventhal (1980); Narcisse and Harcourt (2008); Roberson and Stewart (2006); Taylor et al. (1995); Tyler and Blader (2000); and highlight the expansibility of employees' perception of procedural, distributive, and interactional fairness by the accurate usage and implementation of standards and processes. Moreover, broadly, the findings are aligned with the assertions of Maaniemi and Hakonen (2011), who claimed that the fairness of performance appraisal is dependent on the accuracy of appraisal process.

The results also showed that perceived accuracy was positively related to satisfaction with performance appraisal. This finding complies with the study of Tziner et al. (2002) and the research of Colquitt et al. (2001) stating the presence of interrelations between these two components. Thus, it is possible that more accurate evaluation process created a trust-based attitude towards the performance appraisal itself from the participants' point of view. This position might have led to more positive employees' perception of performance appraisal system and have resulted in increased satisfaction with performance appraisal. In other words, respondents' perception of performance appraisal system accuracy may have affected ratees' perception of satisfaction with performance appraisal. Therefore, respondents' perception of accuracy of measures and procedures might be a significant element in operational process of performance appraisal system. It should be mentioned that in this study accuracy accounted for 58.8% of variance in satisfaction with performance appraisal with the highest SRW in the model (which is .767). That may signify that participants consider accuracy of their appraisal process to be a primary element that impacts their apprehension of satisfaction with performance appraisal. Since in the proposed model there are four elements interrelated with appraisal satisfaction (besides accuracy, there are also three components of perceived fairness), for the respondents the impact of procedural, interactional, and distributive justice might be deemed to be less influential. This attitude might be explained by the fact that performance appraisals in organizations working in Belarus are

mostly brought there by international companies, where these systems are developed so as to avoid personal factor and maximize their fairness. All the participants were graduates (or current students) of FIR, BSU, thus being more likely to be related with international performance appraisal systems conducted in their organizations. As a result they might have enough confidence in the fairness of their organizations' practices as well as in the fairness of their supervisors' decisions and attitudes. Incidentally, since the fairness of performance appraisal might have not been considered as a primary issue for the respondents, accuracy of the implementation and compliance with the organizations' procedures should come to the fore. Since there were some limitations concerning the factor of "Satisfaction" (that will be thoroughly discussed in the limitation part of this study) it is necessary to refer to the interrelations between the elements of perceived fairness and satisfaction with performance appraisal.

The research indicated that both procedural and interactional fairness were slightly positively related to satisfaction with performance appraisal, while distributive fairness was faintly negatively related to appraisal satisfaction. The received results are partially aligned with the studies of Getnet, Jebena, and Tsegaye (2014) and Selvarajan and Cloninger (2011), where the presence of relationship of appraisal satisfaction with procedural and interactional fairness, and the absence of relationship with distributive justice were defined. Moreover, the findings also correspond to the meta-analysis of Colquitt et al. (2001) confirming the interrelations between perceived fairness and appraisal satisfaction.

The presence of a positive relationship between procedural fairness and satisfaction with performance appraisal might indicate that participants were more satisfied with the ongoing performance appraisal when they perceived fairer compliance with the stated in their organizations processes and procedures. This finding fully supports the earlier research proposed by Landy et al. (1978), where employees are more likely to accept, and, therefore, be satisfied with performance appraisal once they believe that it is fairly developed and conducted. At the same time this hypothesis was just partially confirmed since procedural fairness accounted only for 2.5% of variance in satisfaction with performance appraisal. However, despite of the relatively low explanatory power of procedural fairness, it is still considered to be an important

implication to the overall theoretical model in terms of understanding of the impact of performance appraisal on employees' motivation.

The findings also partially supported the hypothesis H_{2c}, which stated that interactional fairness had a positive impact on appraisal satisfaction. It may be possible that participants perceived more satisfaction with performance appraisal when they had adequate explanation and justification of supervisors' decisions and faced helpful attitude on their part. That fully complies with the previous researches of Burke et al. (1978); Cederblom (1982); Dorfman, Stephen, and Loveland (1986); and Nemeroff and Wexley (1977); according to which individuals' satisfaction with performance appraisal is perceived greater when supervisors provide with personal communications, assistance, and supportiveness, and treat employees with dignity and respect.

The presence of small positive relationship between procedural and interactional fairness with satisfaction with performance appraisal as well as the established positive interrelations between perceived accuracy and all the elements of perceived fairness and appraisal satisfaction confirms the assumption that participants' understanding of performance appraisal processes along with their potential confidence in the fairness of their supervisors' decisions and attitudes puts procedural component and its accuracy to the fore in terms of explanation of satisfaction with performance appraisal. It is possible that since the process of performance appraisal is relatively new for Belarussian organizations and is mainly implemented by international organizations (adding the wide usage of such programs as KPI, 360-degrees feedback, etc.) the participants' perception of fairness might come down. In this case the most logical explanation seems to be employees' willingness to have an input into performance appraisal process. This desire combines the perception of both procedural and interactional fairness. It should be mentioned that this assumption corresponds to Dipboye and Pontbriand (1981) research, showing the impact of interrelated appraisal process and interview on appraisal satisfaction. Thus, respondents might have wanted to acknowledge the process of ongoing in their organizations evaluations, and be able to interact with supervisors in order to participate in goals setting and in the discussion of achieved results. The presence of procedures allowing the fulfilment of ratees' intentions as well as fairness might have been important. To sum up the statement, respondents might perceive the

performance appraisal systems in their organizations as reasonably fair because of different internal and external reasons (such as their companies' status, global practices of implementation of evaluation programs, multiple sources of appraisal, as well as different raters). These factors might eventually increase participants' perception of the fairness of the procedures and supervisors' compliance with them. Since the perception of fairness is high enough respondents might have wanted to assure that there is no inaccuracy in their evaluation (whether it is technical, procedural, or personal). To verify that, ratees might have wanted to participate into performance appraisal process themselves through the interactions with their supervisors (as it might comply with the procedures in their organization). In this case satisfaction with performance appraisal serves as an indicator to which participants are satisfied with both appraisal process and their interrelations with the supervisors. In other words, appraisal satisfaction appears for a report of the accuracy and fair evaluation of performance appraisal.

Generalizing, according to theoretical model and results, employees' satisfaction with performance appraisal is more likely to be higher in the following situations:

- When ratees perceive organizational processes and procedures to be fair;
- When there is a positive relationship and regular communications in between an employee and a supervisor, reinforced by the relationship of dignity and respect;
- When there is an accurate evaluation of the processes and their abundance.

It should be mentioned that the results did not support the hypothesis H_{2a} , since it was found that distributive fairness had a relatively small negative impact on appraisal satisfaction. This finding partially corresponded and partially contradicted to earlier researches. Thus, Getnet et al. (2014) and Selvarajan and Cloninger (2011) stated the presence of insignificant positive impact of distributive fairness on appraisal satisfaction. In our case the relationship was significant, but negative. At the same time it was pretty weak and distributive fairness accounted just for 1.1% of variance in satisfaction with performance appraisal. It is possible that for ratees distributive justice, which focuses mainly on outcome fairness, was not an important factor in terms of impact on appraisal satisfaction. Since the sample of the study consisted mainly of the young people who have just started their careers, the received outcomes as well as the fairness of their allocation might have not been considered as the primary objective. The respondents

might have been more oriented on, for example, gaining experience, being acknowledged in the company, establishing good relationships, or keeping the job. Received result can also be clarified with the theory proposed by Alexander and Ruderman (1987), who stated that employees consider the procedure-based fairness is more important than the equal distribution justice, and as a result they are more likely to accept some unfairness in the outcomes if they perceive that the used in the organization procedures are fair (Warokka, Gallato, & Moorthy, 2012). That explains the negative relationship between distributive fairness and appraisal satisfaction, and confirms the presupposition concerning importance of the ongoing in the organizations performance appraisal procedures.

The results also showed that there is insignificant relationship between perceived accuracy and employees' motivation. This finding contradicts to Vest et al. (1995) study where the presence of strong correlation between these elements in functioning appraisal systems was confirmed. It is possible that respondents didn't perceive accuracy as a factor of direct impact on their motivational component but rather apprehended it through other elements of the structural model. Thus, since perceived accuracy was positively related to all the elements of perceived fairness as well as to appraisal satisfaction, the theoretical model checked whether these elements mediated the relationship between perceived accuracy and employees' motivation. Prior to discussion of these mediation effects it is necessary to refer to hypotheses H_{1a}, H_{1b}, H_{1c}, and H₆.

This research found that all the elements of perceived fairness were significantly interrelated with employees' motivation. It should be mentioned that hypothesis H_{1b}, stating the presence of significant positive relationship between procedural justice and employees' motivation, was supported, while hypotheses H_{1a} and H_{1c} were rejected because both distributive and interactional fairness were negatively related to employees' motivation. These findings partially correspond to the results attained by Selvarajan and Cloninger (2011), who confirmed that procedural and interactional justice were positively related to employees' motivation and that perceptions of distributive fairness were not related to employees' motivation. At the same time the studies of Cropanzano et al. (2003) and Weiss et al. (1999) denoted that employees' perception of fairness may

impact their motivation. From this perspective the results of the study comply with these authors' theories (as all the relationships were significant).

Procedural justice showed a significant positive effect on employees' motivation. It is possible that respondents felt more motivated when they perceived organizational processes used during the performance appraisal to be fairer. It should be mentioned that procedural fairness accounted for 24.4% of variance in overall employees' motivation (in the revised model). This is the biggest amount of variance in employees' motivation among all the elements of theoretical model (Appendix AF). That might signify that participants perceived the fairness of the carried out in their organizations processes as the main motivational factor. It is understandable, since to motivate employees most Belarusian companies try to present clear, distinct, and operating appraisal systems (Kozarzhevskiy & Rakova, 2007). As most of this study's respondents have started their careers recently, they might be more motivated by completion of the goals set by their supervisors (which should be comprehensively described in appraisal system) and the established directions. In this case the fairness of the ongoing processes as well as their accuracy (what was discussed earlier) might motivate them to a greater extent than other factors.

Ilgen et al. (1981) emphasize their attention on the appraisal process as the key element in establishment of employees' appraisal satisfaction. Farther, Joblin (1979) stated that by influencing this component of appraisal satisfaction employees' motivation can be increased. Therefore, in order to establish whether procedural justice mediated by satisfaction with performance appraisal may affect employees' motivation PSM mediation model was built. The results (Table 3.5) showed that there was partial mediation in the model. Since the indirect effect was positive and significant, that might signify that participants' acknowledgement of fairness of appraisal process affected their perception of satisfaction with this process, eventually impacting their motivation. Therefore, fairer abundance of the appraisal processes in the company might not only positively and directly affect employees' appraisal satisfaction, but also positively and indirectly influence on their motivation.

The results also showed that interactional fairness was negatively related to employees' motivation. It is a very interesting result, because most researches

emphasized their attention on the fair treatment of employees as on an important fundamental need. Cropanzano et al. (2001) stated that employees' perception of fair attitude may provide the future basis for their motivation while Levy and Williams (2004) claimed that it is participation, communication, and respect that may increase the rates' motivation. The results indicated that respondents' perception of interactional fairness was inversely related to motivation. In order to explain this interrelation it is necessary to refer to the following disclosures: cultural aspect of Belarusian management, respondents' age, and their educational background. Thus, according to Kozarzhevskiy and Rakova (2007), management (in its broad and modern sense, which includes a contingency approach) has just recently come to Belarus because of its collectivist (communist) past. Many companies faced serious problems related with the employees' incapability to understand and comply with "western" norms of management. In this case organizations tried to bring professionals from abroad, or send local specialists to other countries so as to gain experience. But due to the relatively closed nature of Belarus, these steps didn't work out well. As a consequence, Belarussian managerial personnel had serious issues regarding the lack of competences, experience, and practical knowledge in business communication and interrelations with subordinates. This tendency continues in the country (Kozarzhevskiy & Rakova, 2007).

Thereby, on one side we have relatively untrained managerial staff that is incapable to professionally communicate, motivate, and encourage employees (for the most part); and on the other side we have young graduates with good knowledge of international practices and apprehension of global standards. Farther, since cross-cultural interactions impact young generation much faster than other people, the respondents of this study might have been affected by the international business communication standards more and faster than their supervisors. All this might have had an impact on determination of respondents' own understanding of interrelations with their supervisors, supported by their knowledge and expectations. In this case even if they perceived that communication and participation of raters was fair, they might still have been demotivated, because their supervisors' overall behavior contradicted their apprehension of professional international management. This respondents' attitude might also be explained by the maximalism that many young and ambitious people have. To sum up,

the participants, as previous graduates (and current students) of FIR, BSU, that have had multiple theoretical classes concerning international management and best practices might have formed their own understanding of business communication, when entering a new job employment. When they faced that it contradicted to their expectations due to the realities and cultural aspects of Belarusian management as well as inflated requirements due to possible youth maximalism, their perception of interactions with supervisors (together with respectful attitude and participation) might have just decreased and demotivated them. As a result of fairness the perception on the communication quality might have had a negative impact on their overall motivation.

In order to check this assumption, mediation model ISM was built. It was supposed that if respondents were satisfied with interactional fairness it might mean that their perception of the business communication and professionalism of their supervisors have increased, what should have positively affected participants' motivation. In the ISM model a partial mediation was observed. The more important result concerned the indirect effect of interactional fairness on motivation with the mediator of appraisal satisfaction was positive. It is possible that increased perception of management competences from the respondents' point of view might have motivated participants since the presence of improvements in the main component of their worries (i.e. international standards of communication or managers' professionalism) resulted in increased satisfaction with appraisal process. The result corresponds to Ilgen et al. (1981) study which claimed that supervisors' interactions with ratees and ratees' satisfaction (which in its turn includes communication, guidance, feedback, and subordinates' support) are among the main variables of appraisal satisfaction influencing the overall motivation. Moreover, the finding showed that by affecting these components of appraisal satisfaction employees' motivation can be increased, what is consistent with Joblin's (1979) research.

Altogether, the finding might indicated that respondents, in general, were not motivated (even demotivated) by the level and quality of interactions and interpersonal communications with their raters during the performance appraisal process. And the increase of dignity, respect, and polite attitude (interactional fairness) made no difference. That might be caused by the incapability of supervisors to encourage and motivate

employees as well as by the lack of supervisors' knowledge in business communication (especially during the performance appraisal period). Possible raters' participation and respectful behavior might have brought all the efforts to naught since respondents' apprehensions of managers' professionalism might have contradicted their expectations. It is possible that supervisors should make changes in interactions with employees so that employees would be satisfied with these actions rather than just perceive that their interrelations with supervisors are fair. These changes might increase the motivational component.

Distributive justice had a significant negative impact on employees' motivation. It is possible that respondents perceived themselves less motivated when distribution and allocation of rewards and resources in their organizations was fairer. This is an interesting result contradicting the researches of Cropanzano et al. (2003) and Weiss et al. (1999) where distributive justice was positively related to employees' motivation. In order to understand this finding it is necessary to refer to common Belarusian practices of the outcomes' allocation and the stages of participants' career.

Firstly, general Belarusian practices of rewards and resources distribution are commonly associated with the strategies of negative reinforcement and punishment (Dmitriev, 2010). Moreover, organizations usually use different approaches to punish and to reward employees. Rewarding, as a general rule, is planned and in many cases slightly impacted by the employees' effectiveness and results. What concerns punishment, it has inenarrable frequency, and management often uses it in order to discourage the negative behavior or penalize employees for their mistakes. This strategy, according to Korukonda and Hunt (1989) might have positive reinforcement, however in general it leads to low job satisfaction and decrease in overall employees' motivation. This assumption complies with this study results. Thus, the negative interrelations were found not only between distributive fairness and motivation, but also between distributive fairness and appraisal satisfaction. Moreover, in mediation model DSM, where the full mediation was found, the indirect affect was negative as well. This all might signify that the practices applied by organizations of respondents' employment applied for rewards allocation in general were focused on punishment rather than on remuneration. It is possible that this approach have eventually affected participants' perception of the rewards distribution system.

Thus, ratees might have expected that the fairness of the system was likely to result in penalties rather than in bonuses or any other kinds of compensation. In this case even when respondents were satisfied with the distributive fairness they might still have been demotivated. As a result respondents concerns regarding the possible future punishment might have assumed a greater importance than their current rewards perception. In this case it is possible that changing actual practices in the organizations strategies (to positive reinforcement, for example) might alter the negative relationship between distributive fairness and employees' motivation, while future fairer compliance with established practices of reward allocation might just keep decreasing the ratees' motivation.

Another important element that wasn't discussed is participants' current career stage. Since the sample for this study, in general, consists of young people who have just started their career paths; the outcome that they receive might neither satisfy nor motivate them. It is explainable since most employees in their first years receive relatively low salary, no benefits, and small bonuses. Moreover, taking into consideration the fact that in many Belarusian organizations the data concerning the employees' wages leaks to the staff, new employees might perceive that the difference in their salary compared to other employees' salaries is unfair (they might think that they work more, do their job more efficiently, or know more). In this case respondents might thought that fair compliance with the system would not increase their salary (or provide them with additional bonuses, inducements, or payoffs) soon enough, and they might be more motivated and satisfied with appraisal system by receiving unscheduled rewards. But that would be unfair in terms of distributive fairness. Suchwise, this presumption corresponds to the results, where distributive fairness was negatively related to employees' motivation. In order to avoid this kind of ratees' judgments it is possible that management should organize thorough and clear introduction trainings concerning the organizations' awards allocation systems, allowing employees to see what they should do in order to get what they want. It is also worth noting that respondents were more motivated intrinsically rather than extrinsically. And in order to increase their motivation organizations might need to provide conditions that enable employees to gain a sense of self-efficiency and

autonomy, a feeling of achievement, responsibility, and challenge, sense of accomplishment, and opportunity to use their abilities.

Thus, all the mentioned assumptions concerning the reasons for negative relationship between distributive fairness and employees' motivation, together with conclusion that employees are more likely to accept some unfairness in the outcomes if they perceive that the organization's procedures are fair, speak for possibility of better impact on the motivational aspect of employees through the procedural fairness rather than through distributive justice. Moreover, in terms of distributive fairness it is possible that replacing the punishment strategies by positive reinforcement strategies together with clear explanation of their advantages and possibilities for the personnel at all the stages of their careers as well as provision of conditions for achieving rates' inherent satisfaction might eventually increase overall employees' motivation.

The results also completely supported the hypotheses H_6 stating that satisfaction with performance appraisal was positively related to employees' motivation. This finding fully complies with earlier researches of DeNisi and Pritchard (2006) and Lee and Bruvold (2003), who also found the evidence of interrelations between these elements. It is possible that when respondents' perceived more satisfaction with the functioning in their organizations appraisal systems, they were more inclined (more motivated) to improve various aspects of their performance. Therefore, the presence of this relationship may signify that different actions aimed at the improvement of participants' perception of appraisal system might increase their overall motivation.

Since all the interrelations between the elements of perceived fairness and appraisal satisfaction with employees' motivation have been observed, we can come back to the discussion of mediation effects between perceived accuracy and employees' motivation. As it has been stated, these two factors are mediated by procedural, interactional, and distributive fairness and satisfaction with performance appraisal. The results showed that all the direct effects of perceived accuracy on employees' motivation (with and without mediation) were insignificant, while three out of four indirect effects were significant. Thus, indirect mediation was observed in the models ASM, APM, and AIM, while no mediation was detected in the ADM model.

The presence of indirect mediation in the model APM might signify that participants' acknowledgement of appraisal process' accuracy affected their perception of the fairness, what, eventually, impacted their motivation. Accuracy during the appraisal process might have created a trust-based attitude from employees' point of view, what augmented their perception of fairness and resulted in increased motivation. Occurrence of positive and significant mediation in this model (which is at the same time the greatest among all the elements of perceived fairness) is yet an additional proof that respondents' apprehension of procedural justice as well as its accuracy significantly affects overall employees' motivation in the theoretical model.

Another indirect mediation was observed in the model ASM. Thus, perceived accuracy, mediated by appraisal satisfaction, showed the strongest relationship with employees' motivation among all the mediation effects. It is possible that accurate evaluation stimulated employees to accept appraisal system as a valid indicator of their performance what led to increased participation in appraisal process and resulted in an enhanced appraisal satisfaction. This boosted satisfaction with performance appraisal and resulted in motivational accretion.

The result of AIM model showed that perceived accuracy, mediated by interactional fairness, was negatively related to employees' motivation. This finding complies with earlier assumption concerning the relationship between interactional fairness and employees' motivation, where employees' discontent was associated with the level and quality of interactions and interpersonal communications with their supervisors during the performance appraisal process. Likewise, perceived accuracy might have affected and even increased respondents' perception of fairness, but, since participants' awareness of managers' professionalism might have contradicted to their expectations, the final impact of perceived through interactional justice accuracy on employees' motivation remained negative. In this case respondents' attitude towards supervisors' professionalism, communicational skills, ability to motivate and encourage might have affected their consciousness of the motivational impact of perceived accuracy.

Finally, no mediation was found in ADM model. Earlier discussion assumed that participants might have formed negative attitude towards the rewards allocation strategies

in their companies. This might have impacted their perception of distributive fairness and resulted in an opposing relationship with employee's motivation factors. Future fairer compliance with the established practices of reward allocation might just keep decreasing the rates' perception of motivation because distributive fairness itself might have not been an issue. Employees' concerns were rather addressed to rewards allocation strategies applied in their organizations.

Turning to the observed ADM model, it is questionable that perceived accuracy is positively related to distributive justice. At the same time since the respondents did not conceive the change in rewards allocation fairness as a motivational factor, the mediation effect of perceived accuracy on employees' motivation through distributive justice might be insignificant for them. To be clear, perceived accuracy may affect employees' apprehension of distributive fairness. Thus, rates might perceive that accuracy of the evaluation process, for example, resulted in increased distributive fairness. But this enhanced perception of distributive fairness might not be very significant for them, because the main factor that has the greatest impact on formation of their apprehension of distributive fairness is applied in their organizations rewards allocation system. Hence, this system that is predominant in terms of establishing respondents' perception of distributive fairness and all the other factors might be perceived as unimportant. In this case participants just might not pay attention to perceived accuracy as an element impacting motivation by changing their perception of distributive fairness, because the change itself is too small and therefore insignificant.

Another important feature to discuss is the coefficient of determination of the employees' motivation ($R^2=.305$ for this theoretical model). This implies that 30.5% of the variation in overall motivation data is explained by the model. The overall explanatory power, according to Chin's (1998) classification, is at the moderately substantial level. It should be mentioned that this is quite a good indicator in terms of understanding of performance appraisal impact on employee's' motivation. Thus, around one third of the factors affecting employees' motivation can be interpreted, and, therefore, controlled with this research theoretical framework. Since motivation itself is a complex set of psychological processes, which are difficult, in general, to understand, the possibility to explain 30.5% of these processes through the performance appraisal system

and its elements (i.e. perceived accuracy, appraisal satisfaction, procedural, interactional, and distributive fairness) can be considered a significant result.

4.2. Limitations and Recommendations for Future Research

As any other research this study has its own limitations that need to be overcome in future researches. Thus, the first limitation of this study can be considered relatively short sample (161 responses). For the number of questions used in this research it would be appropriate to have at least 250 responses. Moreover, compare to previous studies on the same topic the average number of respondents was around 300-400. A higher sample may bring additional reliability to the results and findings. Another important limitation associated with the final sample is the relatively low response rate (53.4%).

In fact, some respondents might not have, or simply did not want to participate. Another explanation can be related with the method of information collection, which was an online survey. Since participants could finish their surveys whenever they wanted, that, eventually decreased the response rate. Additionally, the one method of information gathering could have led to CMB. Even though the data was tested and no CMB was eliminated in this study, it is recommendable to use different resources to collect responses, as interview, paper questionnaire, or any other methods. Another important shortcoming is that the final instruments measures could be considered perceptual, and, therefore, the results should be interpreted in relation to the inherent restrictions of a survey methodology. Additionally, since the data was collected just once it is possible that a longitudinal study could provide more support for these results. Moreover, experimental study could allow manipulating the sample population so as to obtain more reliable results.

One of the most significant limitations of this study can be considered culturally bounded results. Since the sample was derived from only Minsk (Belarus) area, it is rather difficult to generalize the findings, but they can be valid, for the most part, to Belarusian organization. Additionally, the sample was selected from the graduates or current students of a single BSU. The results might have been different if the population was extended to the graduates or current students representing other universities or other geographical or cultural areas. Moreover, it mostly refers to the people of 20-30 years old

just at the beginning of their career path. Thus, to avoid the limitations based on cultural or age factors it is recommended to obtain a more representative and diverse population for future researches.

Some shortcomings have been found during the CFA and EFA. The first one concerns the insignificance of linear relationship ($p=.070$) in between the factors of “Interactional”→“Motivation”. This might signify that this relationship doesn’t follow the linear trend and these items cannot be analyzed by the means of linear regression analysis (and therefore shouldn’t be analyzed in AMOS). At the same time this linear relationship has the strongest F -value (which is 3.328) among all the possible relationship. Moreover, Rovai et al. (2014) stated that there should be an approximate straight relationship between two continuous variables in order to comply with linearity assumption. Thus, since the observed relationship is the strongest and its significance is close to the threshold of .50, this limitation can be considered to be not crucial.

Another limitation was noticed while testing the data for homoscedasticity. Thus, potential heteroscedasticity was observed in the pairs of “Accuracy”←“Interactional” and “Accuracy”←“Satisfaction”. At the same time since the scatterplots of residuals against predicted scores were used in order to check the data, the assumptions cannot be considered as granted. Moreover, the decisions concerning the presence or the absence of heteroscedasticity are mostly dependent in this case on the perception of the scatterplots, and since there is a large proportion of probability in the conclusions drawn this shortcoming can be reputed acceptable as well.

Finally, the most significant limitation that was detected during EFA and CFA is the presence of CV and DV in the factor of “Satisfaction”. For CV AVE (which is .460) was less than the established threshold of .50; and for DV $AVE(.460) < MSV(.634)$ and the square root of the AVE for “Satisfaction” (which is .678) was less than the absolute value of the correlations with “Accuracy” (which is .796). The presence of CV signified that the parent factor was not explained well enough by the observed variables while the existence of DV showed that the variables were more highly correlated with the items outside the parent factor (in our case with the items of “Accuracy”).

Talking about CV it should be mentioned that the value of AVE (which is .460) for the construct of “Satisfaction” was very close to the chosen threshold of .50.

Moreover, in the prior research of Bettencourt (2004) it was argued that AVE below .50 can still be acceptable, provided the CR is strong and the item-to-total correlations exceed .40. For the observed factor CR=.718, what is greater than the threshold of .70 and therefore can be considered strong enough. The item-to-total correlations of “Satisfaction” with S1 is .771, with S2 is .806, and with S7 is .671, what is way above the necessary .40 (all the correlations are significant at .01 level). Since all the necessary requirements have been met, the value of the AVE for the construct of “Satisfaction” (which is .460) can be considered acceptable and therefore the CV of this measurement is moderately satisfied. It should be mentioned as well that the threshold of .50 is also arguable. Thus, Bollen (1989) accepts the constructs with AVEs as low as .40.

The issues with DV in “Satisfaction” could be caused by its measurement items, which are very closely related to the construct of “Accuracy”. This assumption was confirmed in EFA, where items S1, S2, and S7 were loaded on the factor of “Accuracy” (Appendix U). Additionally, EFA that was conducted just between the items of “Accuracy” and “Satisfaction” showed that variables S1, S2, and S7 were loaded together with the variables of “Accuracy” on the same factor (Appendix P). It is possible that since accuracy is one of the most widely and frequently used criteria of individuals’ acceptance of appraisal system (Lam & Schaubroeck, 1999) it may serve as a main element of employees’ perception of satisfaction with performance appraisal in the organization where the fairness is not an issue. In this case satisfied with performance appraisal employees might apprehend its accuracy a priori. Thus, the frequent occurrence of employees’ accuracy apprehension in the performance appraisal systems where they perceived satisfied may have caused close correlation between these two factors and the lack of DV. However, looking at the CR index of the both constructs and Cronbach’s alphas in EFA it was decided to keep the construct of “Satisfaction” as we believe that it actually measures the respondents’ satisfaction with performance appraisal. At the same time since some violation on DV was detected the results should be interpreted carefully. It is also recommended to apply another scale for determination of satisfaction with performance appraisal (which should be more complex) in future researches.

Among others it is necessary to mention the appliance of three scales of perceived fairness in this study (procedural, distributive, and interactional). This approach is

considered traditional and supported by Blodgett, Hill, and Tax (1997); Clemmer (1993); Smith and Bolton (2002); Tax, Brown, and Chandrashekar (1998); etc. At the same time this traditional three factor model of fairness has been recently conceptualized to four-type model of justice, where in addition to distributive and procedural fairness, interactional justice was divided into two types: interpersonal and informational. In this study interactional fairness appeared as interpersonal justice, i.e. the fairness of interpersonal treatment contributed during the adoption of procedures and outcomes' distribution. It is possible that addition of informational fairness (which is identified as the fairness of information and explanations) to the framework may affect the results and provide more explanation to the observed model.

Finally, since the appraisal characteristics (feedback, goals, purpose, methods, and source) of the provided theoretical model (Figure 1.17) haven't been studied due to their extensiveness, extensionality, and indirect effect on motivation it is recommended to observe their impact on perceived fairness and perceived accuracy as well as their mediation effects on appraisal satisfaction and motivation in separate researches.

Despite of its limitations, this study intends to fill in the gap in understanding of the relationships between performance appraisal (as well as its characteristics) and employees' motivation. Future researches could replicate this study with a wider range of data so as to analyze the received results, deepen the understanding of interactions between observed variables and generalize the outcomes.

4.3 Implications for Research and Practice

A number of recommendations were deemed necessary in respect of the obtained in this study results. To begin, more future research should be focused on evaluating the impact of procedural fairness on appraisal satisfaction and employees' motivation. Since the results showed significant relationship between these elements, it becomes important for companies to train managers and supervisors (i.e. all the raters) to conduct appraisals in obedience to the companies' performance appraisal procedures and policies. These trainings might increase employees' perception towards the procedural fairness of ongoing in their organizations appraisals. Particular attention should be also given to the impact of interactional fairness on appraisal satisfaction and its mediation effect on

employees' motivation. Based on the above, it is recommended that raters would be trained to conduct personnel evaluation system in a fair manner. Improved skills and knowledge would allow them to increase employees' perception of interactional justice during the performance appraisals.

Results of the study further brought to the fore that perceived accuracy was positively related to appraisal satisfaction and all the elements of perceived fairness. Moreover, it indirectly affected employees' motivation through procedural fairness and satisfaction with performance appraisal. These findings relate to the importance of perceived accuracy in organizations and its increase through a variety of means. First of all, in order to improve the accuracy of employees' performance appraisals it is suggested to organize the frame of reference training. Being a complex set of assumptions and attitudes a frame of reference includes beliefs, values, culture, and other ways in which employees may bias the understanding and judgements. By providing this training their perception of accuracy of performance appraisal can be filtered and therefore clear meaning of the system might be established. Another important tool that companies may apply is encouraging of raters to track employees' performance. That would allow assuring ratees that they are appraised by accurate standards that reflect their actual performance.

A special attention should be paid towards the cultural aspect of the study. Thus, since the provided theoretical model can be mostly associated with American or European performance appraisal systems, but the study was conducted among the respondent who lived and studied in Belarus, it is recommended in future researches to use cultural variables that might potentially impact the relationships between the elements of the model. These cultural factors may to some extent explain the interrelations between distributive fairness and employees' motivation as well as between interactional justice and ratees' motivation.

Another area of future research that would prove particularly useful as a result of this study is the relationship between distributive justice and both employees' motivation and appraisal satisfaction. This research indicated that distributive fairness was negatively related to both elements. It was assumed that the cultural aspect of applied in Belarusian organizations strategies of negative reinforcement and punishment (Dmitriev,

2010) as well as possible acceptance of some unfairness in the outcomes by employees in case of their perception of fairness in the used in the organizations procedures may have resulted in this relationship. Based on the above, it is recommended that Belarussian organizations would start working towards the implementation of the strategies of positive reinforcement and their abidance. Moreover, conduction of trainings designed to explain the outcomes allocation and it fairness in organization might increase the perception of distributive fairness by employees.

Finally, another important finding was the fact that interactional fairness was negatively related to employees' motivation, but once the relationship was measured through the mediator of appraisal satisfaction, it became positive. It has been suggested that respondents' perception of business communication and interrelations in organizations might have contradicted to their expectations due to the cultural aspect of Belarusian management and youth maximalism. In this case it is recommended to organize trainings for appraisers in order to improve their business communication skills as well as the knowledge of interaction with ratees during the performance appraisal so they would correspond to international standards. This might not just increase employees' perception of interactional fairness, but also improve different aspects of managers' and supervisors' work. At the same time it is also suggested to provide on-job trainings for employees with the explanation of accepted in organizations culture and rules of behavior. That might allow ratees to understand that ongoing in the organizations communication styles might not be the result of management unprofessionalism, but rather because it is the chosen way of organizations' functionality.

4.4 Conclusion

Many of previous researches have indicated that a business ongoing success depends to a wide extend on the presence of highly-motivated employees in organizations who are involved in the work and can achieve better results. In this case understanding of employees' motivation in terms of organizational development appears to be one of the key elements of work effectiveness. Performance appraisal, in its turn, works as a motivating mechanism. According to Guest (1997) and Judge and Ferris (1993) it is considered to be one of the most important HRM functions and an integral part of

organizations' HRM effectiveness. Thus, if motivation itself according to Kreitner (1995) can be presented as "the drive of the people's psychological state that moves their behavior and direction", performance appraisal would serve as a tool of addressing those behaviors in a desired way. In this context in order to understand the relationship between these elements it was decided to examine the impact of performance appraisal and its constituent elements (perceived accuracy, satisfaction with performance appraisal, procedural, distributive, and interactional fairness) on employees' motivation. That was the primary objective of this study. In addition, the relationships in between these elements have been investigated as well. To achieve these goals 12 hypothesis were suggested and explored by dint of statistical tools used in AMOS 22.0 and SPSS 21.0.

The study revealed that performance appraisal system can be an effective instrument not only in employees' motivation but also in understanding of this process (the proposed theoretical model explained more than 30% of overall motivation). This assumption is aligned with earlier studies where researches stated that performance appraisal system can be used for motivational purposes (Klingner & Nalbandian, 1998; Murphy & Cleveland, 1995; Roberts & Pavlak, 1996).

It was found that perceived accuracy in performance appraisal gives a significant impact towards the satisfaction with performance appraisal system and all the elements of perceived fairness. These findings fully comply with earlier studies of Cardy and Dobbins (1994); Lam and Schaubroeck (1999); Narcisse and Harcourt (2008); Roberson and Stewart (2006); Tyler and Blader (2000); Vest et al. (1995); etc., and denote the importance of further investigation of their interrelations.

The results also revealed that perceived accuracy wasn't directly related to employees' motivation. It is possible that respondents didn't perceive accuracy as a factor of direct impact on their motivational component but rather apprehended it through other elements included in the structural model. The above made assumption was confirmed during the testing of mediation models. It was found that perceived accuracy indirectly positively affected employees' motivation through appraisal satisfaction and procedural fairness.

From the findings of the study, one may also conclude that employees are more motivated when their apprehension of procedural fairness is higher rather than when they

perceive that performance appraisal is fair in terms of interactional or distributive justice. This may have occurred because of the presence of cultural aspect in this study (what corresponds to the research of Selvarajan and Cloninger (2011), or because employees' consideration of the procedure-based fairness was more important for ratees rather than the equal distribution justice (what complies with Alexander and Ruderman (1987)), or because of any other factors (respondents' age, current stage of their career path, etc.). One way or another the presence of mixed results (negative impact of distributive fairness on appraisal satisfaction and employees' motivation and negative relationship between interactional justice and employees' motivation contradicts to previous studies of Cropanzano et al. (2003); Getnet et al. (2014); and Weiss et al. (1999); and suggests that there is much more to learn about these relationships.

It was also revealed that employees' apprehension of appraisal satisfaction can serve as a significant component in their motivation. This finding fully corresponds to the previous researches of DeNisi and Pritchard (2006) and Lee and Bruvold (2003). It was also found that respondents' perception of accuracy, procedural, and interactional fairness that results in increased satisfaction with performance appraisal system may, to a great degree, impact the overall motivation. These findings may bring relevant implications for future researches and encourage other people to study indirect effects of the elements of performance appraisal on employees' motivation.

In general, the study contributes to the field of understanding of employees' motivation. The findings may be used in organizations so as to improve the overall motivation of the staff or to understand the areas of concern that might negatively affect employees' motivation. It should be mentioned that this work to some degree can be considered a unique study, because it was based on the information received from Belarusian respondents. For that matter the findings are likely to describe and explain the situation with performance appraisal and its impact on employees' motivation in Belarus. All in all, this research and other research to follow will contribute to knowledge of employees' motivation and its interrelations with performance appraisal and its elements. This topic will never lose its relevance since motivated employees will always be a target of companies that want to be successful and to survive in the modern competitive world.

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Appendix A

Statistics of Respondents' Gender in the Final Sample

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	46	28.6	28.6	28.6
Female	115	71.4	71.4	100.0
Total	161	100.0	100.0	

Appendix B

Statistics of Respondents' Age (Full Years) in the Final Sample

Age	Frequency	Percent	Valid Percent	Cumulative Percent
20.00	5	3.1	3.1	3.1
21.00	9	5.6	5.6	8.7
22.00	9	5.6	5.6	14.3
23.00	20	12.4	12.4	26.7
24.00	39	24.2	24.2	50.9
25.00	45	28.0	28.0	78.9
26.00	15	9.3	9.3	88.2
27.00	9	5.6	5.6	93.8
30.00	1	0.6	0.6	94.4
34.00	3	1.9	1.9	96.3
35.00	1	0.6	0.6	96.9
36.00	3	1.9	1.9	98.8
41.00	1	0.6	0.6	99.4
56.00	1	0.6	0.6	100.0
Total	161	100.0	100.0	

Appendix C

Statistics of Respondents' Highest Level of Completed Education in the Final Sample

Education level	Frequency	Percent	Valid Percent	Cumulative Percent
2 years of university	2	1.2	1.2	1.2
3 years of university	5	3.1	3.1	4.3
4 years of university	29	18.0	18.0	22.4
Graduated from the university	106	65.8	65.8	88.2
Some graduated classes	11	6.8	6.8	95.0
Completed graduated school	8	5.0	5.0	100.0
Total	161	100.0	100.0	

Appendix D

Statistics of Respondents' Work Experience (Full Years) in the Final Sample

Years of work experience	Frequency	Percent	Valid Percent	Cumulative Percent
.00	4	2.5	2.5	2.5
1.00	31	19.3	19.3	21.7
2.00	45	28.0	28.0	49.7
3.00	35	21.7	21.7	71.4
4.00	19	11.8	11.8	83.2
5.00	11	6.8	6.8	90.1
6.00	3	1.9	1.9	91.9
7.00	3	1.9	1.9	93.8
8.00	2	1.2	1.2	95.0
10.00	1	0.6	0.6	95.7
12.00	4	2.5	2.5	98.1
15.00	1	0.6	0.6	98.8
17.00	1	0.6	0.6	99.4
36.00	1	0.6	0.6	100.0
Total	161	100.0	100.0	

Appendix E

Statistics of Respondents' Work Sectors in the Final Sample

Work Sector	Frequency	Percent	Valid Percent	Cumulative Percent
Accounting and Auditing	8	5.0	5.0	5.0
Administrative and Support Services	6	3.7	3.7	8.7
Advertising, Marketing, and Public Relations	13	8.1	8.1	16.8
Arts, Entertainment, and Media	5	3.1	3.1	19.9
Banking	5	3.1	3.1	23.0
Community, Social Services, and Non- profit	1	0.6	0.6	23.6
Construction, Trades, and Mining	1	0.6	0.6	24.2
Consulting Services	4	2.5	2.5	26.7
Design	1	0.6	.6	27.3
Education, Training, and Library	8	5.0	5.0	32.3
Employment and Recruitment Agency	1	0.6	0.6	32.9
Engineering	3	1.9	1.9	34.8
Finance and Economics	15	9.3	9.3	44.1
Financial Services	2	1.2	1.2	45.3
Government and Policy	2	1.2	1.2	46.6
Health and Social Care, Practitioner and Technician	3	1.9	1.9	48.4
Hospitality and Tourism	21	13.0	13.0	61.5
Human Resources	10	6.2	6.2	67.7
Industry	2	1.2	1.2	68.9
Information Technology	17	10.6	10.6	79.5
Insurance	1	0.6	0.6	80.1
Law Enforcement and Security	1	0.6	0.6	80.7
Legal	6	3.7	3.7	84.5
Other	10	6.2	6.2	90.7
Restaurant and Food Service	1	0.6	0.6	91.3
Retail and Wholesale	6	3.7	3.7	95.0
Sales	5	3.1	3.1	98.1
Science and Research	2	1.2	1.2	99.4
Voluntary Services	1	0.6	0.6	100.0
Total	161	100.0	100.0	

Appendix F

Instrument of the Study

Here presented the used in this study instrument.

Dear participant,

I am Artsem Lashchonau, graduate student of the University of Algarve, Faro, Portugal. I am pursuing the research on performance appraisal and employees' motivation as a part of Master's Degree program in Human Resources Management.

Participants of this survey will NOT be identified. The data collected will be analyzed and used to determine any educational needs which can then be implemented as appropriate. Respondents agree to take part in this survey by completing it.

If you have any questions, you may contact:

Artsem Lashchonau

E-mail: lashchonau@gmail.com

Skype: lashchonau

LinkedIn: <https://www.linkedin.com/in/alashchonau>

Thank you very much for your assistance!

* 1. What is your gender?

Female

Male

* 2. What is the highest level of education you have completed?

* 3. What is your work sector?

* 4. Please, answer the following questions:

What is your age (full years):

What is your work experience (full years):

Figure F1. Control variables questionnaire.

Instructions: using the scale below, please indicate to what extent each of the following items corresponds to the reasons why you are presently involved in your work. Thus, if the statement does not correspond at all choose 1; if it corresponds exactly choose 7; if the statement corresponds as somewhere in the middle, please rate it accordingly.

Table F1

Work Extrinsic and Intrinsic Motivation Questionnaire

№	Statement	Scale
1.	Because this is the type of work I chose to do to attain a certain lifestyle	1 2 3 4 5 6 7
2.	For the income it provides me	1 2 3 4 5 6 7
3.	I ask myself this question, I don't seem to be able to manage the important tasks related to this work.	1 2 3 4 5 6 7
4.	Because I derive much pleasure from learning new things	1 2 3 4 5 6 7
5.	Because it has become a fundamental part of who I am	1 2 3 4 5 6 7
6.	Because I want to succeed at this job, if not I would be very ashamed of myself	1 2 3 4 5 6 7
7.	Because I chose this type of work to attain my career goals	1 2 3 4 5 6 7
8.	For the satisfaction I experience from taking on interesting challenges	1 2 3 4 5 6 7
9.	Because it allows me to earn money	1 2 3 4 5 6 7
10.	Because it is part of the way in which I have chosen to live my life	1 2 3 4 5 6 7
11.	Because I want to be very good at this work, otherwise I would be very disappointed	1 2 3 4 5 6 7
12.	I don't know why, we are provided with unrealistic working conditions	1 2 3 4 5 6 7
13.	Because I want to be a "winner" in life	1 2 3 4 5 6 7
14.	Because it is the type of work I have chosen to attain certain important objectives	1 2 3 4 5 6 7
15.	For the satisfaction I experience when I am successful at doing difficult tasks	1 2 3 4 5 6 7
16.	Because this type of work provides me with security	1 2 3 4 5 6 7

N ^o	Statement	Scale						
17.	I don't know, too much is expected of us	1	2	3	4	5	6	7
18.	Because this job is a part of my life	1	2	3	4	5	6	7

Instructions: using the scale below, please indicate to what extent you agree or disagree with the following items. Thus, if you strongly disagree with the statement choose 1; if you strongly agree choose 7; if the statement corresponds as somewhere in the middle, please rate it accordingly.

* Your outcome refers to your base salary, bonus payment, promotion opportunities, etc.

Table F2

Perceived Fairness Questionnaire

N ^o	Statement	Scale						
1.	Have you been able to express your views and feelings during the performance appraisal?	1	2	3	4	5	6	7
2.	Have you had influence over the outcome arrived by the performance appraisal?	1	2	3	4	5	6	7
3.	Has the performance appraisal been applied consistently?	1	2	3	4	5	6	7
4.	Has the performance appraisal been free of bias?	1	2	3	4	5	6	7
5.	Has the performance appraisal been based on accurate information?	1	2	3	4	5	6	7
6.	Have you been able to appeal the outcome arrived at by the performance appraisal?	1	2	3	4	5	6	7
7.	Has the performance appraisal upheld ethical and moral standards?	1	2	3	4	5	6	7
8.	Does your outcome reflect the effort you have put into your work?	1	2	3	4	5	6	7
9.	Is your outcome appropriate for the work you have completed?	1	2	3	4	5	6	7
10.	Does your outcome reflect what you have contributed to the organization?	1	2	3	4	5	6	7
11.	Is your outcome justified, given your performance?	1	2	3	4	5	6	7
12.	Has your supervisor treated you in a polite manner?	1	2	3	4	5	6	7
13.	Has your supervisor treated you with dignity?	1	2	3	4	5	6	7
14.	Has your supervisor treated you with respect?	1	2	3	4	5	6	7

№	Statement	Scale
15.	Has your supervisor refrained from improper remarks or comments?	1 2 3 4 5 6 7

Instructions: please think back to the last time your supervisor discussed your overall performance in a feedback interview or formal appraisal. Using the scale below, please indicate to what extent you agree or disagree with the following items. Thus, if you strongly disagree with the statement choose 1; if you strongly agree choose 7; if the statement corresponds as somewhere in the middle, please rate it accordingly.

Table F3

Satisfaction with Performance Appraisal Questionnaire

№	Statement	Scale
1.	My last feedback interview (appraisal) increased my understanding of the job	1 2 3 4 5 6 7
2.	My last feedback interview (appraisal) gave me a good idea of how well I'm doing in my job	1 2 3 4 5 6 7
3.	My last feedback interview (appraisal) with my supervisor made our relationship worse	1 2 3 4 5 6 7
4.	My last feedback interview (appraisal) would have been improved if subordinate ratings were included	1 2 3 4 5 6 7
5.	I felt satisfied with the feedback interview (appraisal)	1 2 3 4 5 6 7
6.	I felt the feedback interview (appraisal) was unfair	1 2 3 4 5 6 7
7.	I think the feedback interview helped me learn to do a better job	1 2 3 4 5 6 7

Instructions: using the scale below, please indicate to what extent you agree or disagree with the following items. Thus, if you strongly disagree with the statement choose 1; if you strongly agree choose 7; if the statement corresponds as somewhere in the middle, please rate it accordingly.

Table F4

Perceived Accuracy Questionnaire

№	Statement	Scale						
1.	My last performance appraisal was accurate	1	2	3	4	5	6	7
2.	My last performance appraisal accurately reflected my performance for the entire rating period	1	2	3	4	5	6	7
3.	My last performance appraisal accurately described my strengths and weaknesses	1	2	3	4	5	6	7
4.	My last performance appraisal rating accurately measured my true performance	1	2	3	4	5	6	7

Appendix G

Work Extrinsic and Intrinsic Motivation Scale. Adapted from “Work Extrinsic and Intrinsic Motivation Scale: Its Value for Organizational Psychology Research,” by M.A. Tremblay et al., *Canadian Journal of Behavioral Science*, 41(4), 2009, Appendix A.

Does not correspond at all	Corresponds moderately					Corresponds exactly			
1	2	3	4	5	6	7			
1. Because this is the type of work I chose to do to attain a certain lifestyle.			1	2	3	4	5	6	7
2. For the income it provides me.			1	2	3	4	5	6	7
3. I ask myself this question, I don't seem to be able to manage the important tasks related to this work.			1	2	3	4	5	6	7
4. Because I derive much pleasure from learning new things.			1	2	3	4	5	6	7
5. Because it has become a fundamental part of who I am.			1	2	3	4	5	6	7
6. Because I want to succeed at this job, if not I would be very ashamed of myself.			1	2	3	4	5	6	7
7. Because I chose this type of work to attain my career goals.			1	2	3	4	5	6	7
8. For the satisfaction I experience from taking on interesting challenges			1	2	3	4	5	6	7
9. Because it allows me to earn money.			1	2	3	4	5	6	7
10. Because it is part of the way in which I have chosen to live my life.			1	2	3	4	5	6	7
11. Because I want to be very good at this work, otherwise I would be very disappointed.			1	2	3	4	5	6	7
12. I don't know why, we are provided with unrealistic working conditions.			1	2	3	4	5	6	7
13. Because I want to be a “winner” in life.			1	2	3	4	5	6	7
14. Because it is the type of work I have chosen to attain certain important objectives.			1	2	3	4	5	6	7
15. For the satisfaction I experience when I am successful at doing difficult tasks.			1	2	3	4	5	6	7
16. Because this type of work provides me with security.			1	2	3	4	5	6	7
17. I don't know, too much is expected of us.			1	2	3	4	5	6	7
18. Because this job is a part of my life.			1	2	3	4	5	6	7

Note. Intrinsic motivation = 4,8,15; integrated regulation = 5,10,18; identified regulation = 1,7,14; introjected regulation = 6,11,13; external regulation = 2,9,16; amotivation = 3,12,17.

Appendix H

Perceived Fairness Scale. Adapted from “On the Dimensionality of Organizational Justice: a Construct Validation of a Measure,” by J.A. Colquitt, *Journal of Applied Psychology*, 89(3), 2001, p. 389.

Measure item

Procedural justice

The following items refer to the procedures used to arrive at your (outcome). To what extent:

1. Have you been able to express your views and feelings during those procedures?
2. Have you had influence over the (outcome) 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 (outcome) arrived at by those procedures?
7. Have those procedures upheld ethical and moral standards?

Distributive justice

The following items refer to your (outcome). To what extent:

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

Interpersonal justice

The following items refer to (the authority figure who enacted the procedure). To what extent:

1. Has (he/she) treated you in a polite manner?
2. Has (he/she) treated you with dignity?
3. Has (he/she) treated you with respect?
4. Has (he/she) refrained from improper remarks or comments?

Informational justice

The following items refer to (the authority figure who enacted the procedure). To what extent:

1. Has (he/she) been candid in (his/her) communications with you?
 2. Has (he/she) explained the procedures thoroughly?
 3. Were (his/her) explanations regarding the procedures reasonable?
 4. Has (he/she) communicated details in a timely manner?
 5. Has (he/she) seemed to tailor (his/her) communications to individuals' specific needs?
-

Note. All items use a 5-point scale with anchors of 1 = *to a small extent* and 5 = *to a large extent*.

Appendix I

Satisfaction with Performance Appraisal Scale. Adapted from “An Analysis of Managers’ Reaction to Their Own Performance Appraisal Feedback,” by J.S. Russell and D.L. Goode, *Journal of Applied Psychology*, 73(1), 1988, p. 65.

Item

1. My last feedback interview (appraisal) increased my understanding of the job
 2. My last feedback interview (appraisal) gave me a good idea of how well I’m doing in my job
 3. My last feedback interview (appraisal) with my supervisor made our relationship worse (R)
 4. My last feedback interview (appraisal) would have been improved if subordinate ratings were included
 5. I felt satisfied with the feedback interview (appraisal)
 6. I felt the feedback interview (appraisal) was unfair (R)
 7. I think the feedback interview helped me learn to do a better job
-

Note. Instructions read, “Please think back to the last time your supervisor discussed your overall performance in a feedback interview or formal appraisal.” (R) indicates reverse scoring.

Appendix J

Descriptive Statistics

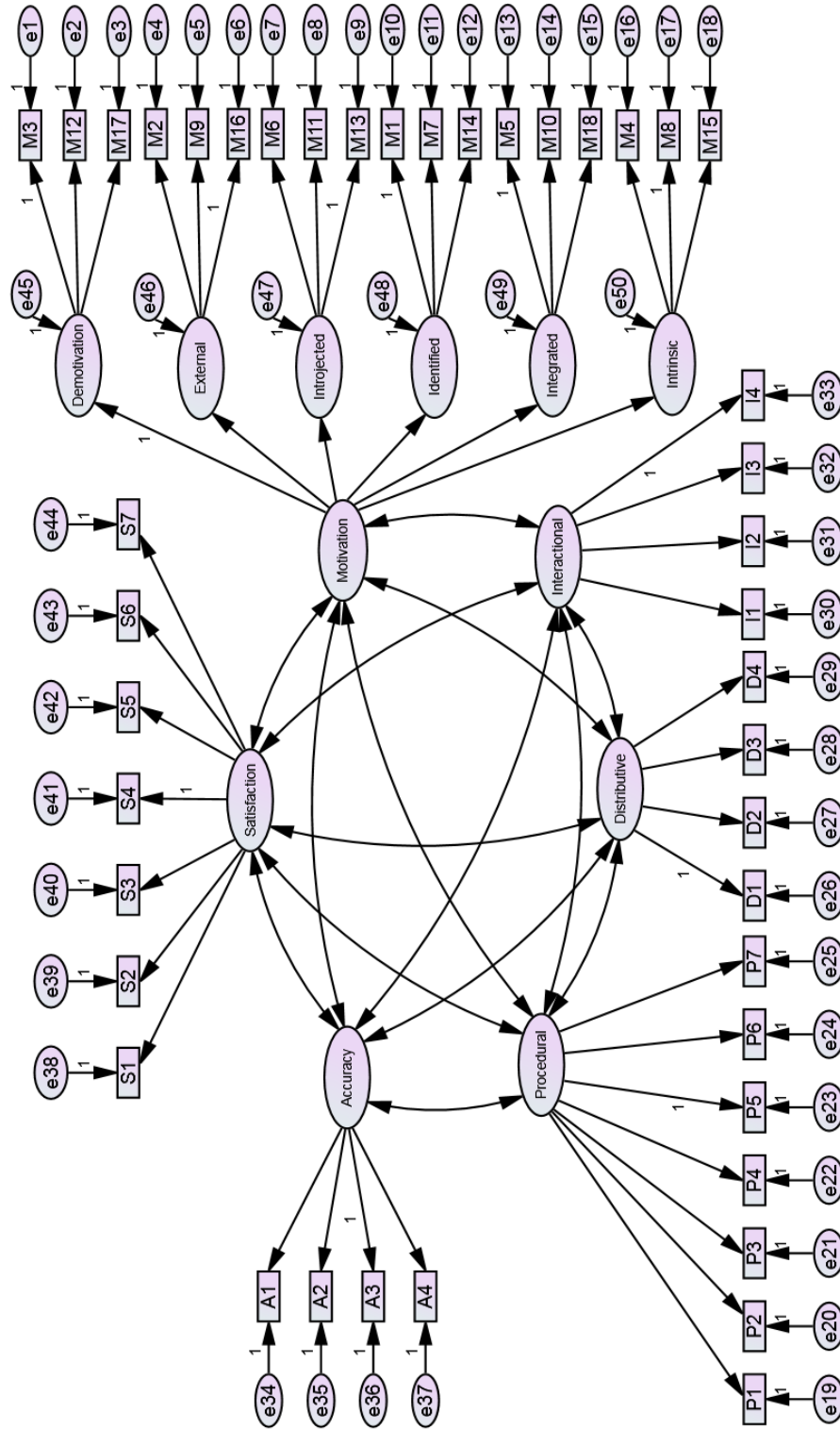
Items	<i>N</i>	Range	Minimum	Maximum	Mean	<i>SD</i>
M1	161	5	2	7	5.07	1.325
M2	161	6	1	7	5.09	1.329
M3	161	6	1	7	2.46	1.440
M4	161	5	2	7	5.73	1.055
M5	161	6	1	7	4.51	1.517
M6	161	6	1	7	4.95	1.532
M7	161	6	1	7	5.17	1.530
M8	161	6	1	7	5.42	1.207
M9	161	6	1	7	5.24	1.481
M10	161	6	1	7	4.72	1.393
M11	161	6	1	7	5.08	1.374
M12	161	6	1	7	3.02	1.483
M13	161	6	1	7	4.97	1.493
M14	161	5	2	7	5.06	1.233
M15	161	6	1	7	5.48	1.194
M16	161	6	1	7	4.24	1.468
M17	161	6	1	7	3.23	1.501
M18	161	6	1	7	4.69	1.415
P1	161	6	1	7	4.98	1.242
P2	161	5	2	7	4.84	1.177
P3	161	6	1	7	4.71	1.213
P4	161	6	1	7	4.68	1.320
P5	161	5	2	7	5.01	1.222
P6	161	6	1	7	4.43	1.312
P7	161	6	1	7	5.12	1.257
D1	161	6	1	7	4.89	1.392
D2	161	6	1	7	4.91	1.385
D3	161	6	1	7	4.88	1.301

Items	<i>N</i>	Range	Minimum	Maximum	Mean	<i>SD</i>
D4	161	6	1	7	4.78	1.260
I1	161	6	1	7	5.53	1.314
I2	161	6	1	7	5.30	1.391
I3	161	6	1	7	5.49	1.309
I4	161	6	1	7	5.05	1.453
S1	161	5	2	7	4.90	1.068
S2	161	5	2	7	5.09	1.057
S3	161	6	1	7	5.28	1.602
S4	161	5	1	6	3.62	1.289
S5	161	6	1	7	5.12	1.117
S6	161	5	2	7	5.10	1.484
S7	161	6	1	7	4.84	1.233
A1	161	5	2	7	4.97	1.092
A2	161	6	1	7	4.74	1.175
A3	161	6	1	7	4.66	1.220
A4	161	6	1	7	4.65	1.190
Valid <i>N</i> (listwise)	161					

Note. *N* = number of items. *SD* = standard deviation.

Appendix K

Confirmatory Factor Diagram (Full Model)



Appendix L

Validity Scores With the Removed Items M3, M13, M16, and S4

	CR	AVE	MSV	ASV	1	2	3	4	5	6
1. Satisfaction	.750	.343	.812	.397	.585					
2. Procedural	.857	.464	.420	.323	.626	.681				
3. Distributive	.890	.671	.420	.213	.521	.648	.819			
4. Interactional	.903	.702	.343	.192	.586	.541	.299	.838		
5. Accuracy	.907	.708	.812	.354	.901	.605	.491	.466	.841	
6. Motivation	.839	.582	.167	.101	-.409	-.378	-.209	-.131	-.367	.763

Note. Problem areas are shown in boldface. CR = composite reliability. AVE = average variance extracted. MSV = maximum shared variance. ASV = average shared variance.

Appendix M

Validity Scores With the Removed Items M3, M13, M16, S4, and S5

	CR	AVE	MSV	ASV	1	2	3	4	5	6
1. Satisfaction	.698	.329	.666	.336	.574					
2. Procedural	.857	.464	.420	.318	.606	.681				
3. Distributive	.890	.670	.420	.195	.424	.648	.819			
4. Interactional	.903	.703	.312	.186	.559	.541	.299	.839		
5. Accuracy	.907	.709	.666	.325	.816	.605	.491	.466	.842	
6. Motivation	.839	.583	.155	.099	-.394	-.378	-.209	-.131	-.368	.764

Note. Problem areas are shown in boldface. CR = composite reliability. AVE = average variance extracted. MSV = maximum shared variance. ASV = average shared variance.

Appendix N

Validity Scores With the Removed Items M3, M13, M16, S4, S5, P1, P6, and P7

	CR	AVE	MSV	ASV	1	2	3	4	5	6
1. Satisfaction	.698	.329	.666	.336	.573					
2. Procedural	.808	.513	.426	.321	.606	.716				
3. Distributive	.890	.670	.426	.196	.424	.653	.819			
4. Interactional	.903	.703	.312	.185	.559	.537	.299	.838		
5. Accuracy	.907	.709	.666	.327	.816	.611	.492	.467	.842	
6. Motivation	.839	.583	.155	.100	-.394	-.386	-.210	-.131	-.368	.763

Note. Problem areas are shown in boldface. CR = composite reliability. AVE = average variance extracted. MSV = maximum shared variance. ASV = average shared variance.

Appendix O

Validity Scores With the Removed Items M3, M13, M16, S4, S5, P1, P6, P7, S3, and S6

	CR	AVE	MSV	ASV	1	2	3	4	5	6
1. Satisfaction	.718	.460	.634	.311	.678					
2. Procedural	.808	.513	.426	.315	.583	.716				
3. Distributive	.890	.670	.426	.192	.399	.653	.819			
4. Interactional	.903	.704	.288	.176	.514	.537	.300	.839		
5. Accuracy	.907	.709	.634	.321	.796	.611	.492	.467	.842	
6. Motivation	.839	.583	.160	.101	-.400	-.386	-.210	-.131	-.368	.763

Note. Problem areas are shown in boldface. CR = composite reliability. AVE = average variance extracted. MSV = maximum shared variance. ASV = average shared variance.

Appendix P

Rotated Factor Matrix

Items	Factor	
	1	2
A2	.856	.106
A3	.808	.137
A1	.804	.243
A4	.798	.120
S5	.656	.339
S2	.615	.193
S1	.548	.111
S7	.547	.178
S3	.114	.986
S6	.242	.692

Note. Extraction method: Principal Axis Factoring. Rotation method: Varimax with Kaiser Normalization. Rotation converged in 3 iterations.

Appendix Q

Group Differences

	1 half		2 half		z-score
	Estimate	ρ	Estimate	ρ	
External ← Motivation	-0.951	0.091	17.343	0.931	0.091
Introjected ← Motivation	-2.609	0.024	60.204	0.931	0.090
Identified ← Motivation	-2.222	0.025	33.528	0.931	0.092
Integrated ← Motivation	-2.974	0.021	65.577	0.931	0.090
Intrinsic ← Motivation	-2.337	0.022	53.828	0.931	0.090
M17 ← Demotivation	1.618	0.003	0.026	0.998	-0.143
M9 ← External	1.786	0.004	1.232	0.011	-0.707
M11 ← Introjected	1.235	0.000	0.937	0.000	-1.231
M7 ← Identified	1.217	0.000	1.957	0.000	1.242
M14 ← Identified	0.921	0.000	2.140	0.000	2.089**
M4 ← Intrinsic	0.684	0.000	0.658	0.000	-0.158
M15 ← Intrinsic	0.797	0.000	0.846	0.000	0.261
M10 ← Integrated	0.694	0.000	0.792	0.000	0.611
M18 ← Integrated	0.880	0.000	0.953	0.000	0.464
P4 ← Procedural	1.312	0.000	1.090	0.000	-0.838
P3 ← Procedural	1.254	0.000	0.643	0.000	-2.524**
D4 ← Distributive	0.954	0.000	1.047	0.000	0.509
D3 ← Distributive	1.019	0.000	1.051	0.000	0.170
D2 ← Distributive	1.025	0.000	1.012	0.000	-0.065
I3 ← Interactional	1.215	0.000	1.305	0.000	0.357
I2 ← Interactional	0.981	0.000	1.240	0.000	0.976
I1 ← Interactional	1.092	0.000	1.269	0.000	0.698
A4 ← Accuracy	0.992	0.000	0.953	0.000	-0.251
A2 ← Accuracy	1.013	0.000	1.016	0.000	0.021
A1 ← Accuracy	0.877	0.000	0.940	0.000	0.447
S2 ← Satisfaction	0.942	0.000	1.019	0.000	0.248
S1 ← Satisfaction	0.977	0.000	0.857	0.000	-0.410
P2 ← Procedural	0.910	0.000	0.967	0.000	0.246

Note. ρ = probability value. * $\rho < .10$. ** $\rho < .05$. *** $\rho < .01$.

Appendix R

Total Variance Explained

Factor	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	9.474	27.866	27.866	8.776	25.813	25.813
2	4.483	13.184	41.050			
3	2.434	7.160	48.210			
4	2.001	5.886	54.096			
5	1.462	4.301	58.397			
6	1.413	4.156	62.553			
7	1.157	3.403	65.957			
8	1.111	3.267	69.224			
9	0.990	2.913	72.136			
10	0.929	2.731	74.868			
11	0.773	2.272	77.140			
12	0.640	1.881	79.021			
13	0.605	1.781	80.802			
14	0.603	1.775	82.576			
15	0.560	1.647	84.223			
16	0.510	1.499	85.722			
17	0.477	1.402	87.124			
18	0.418	1.229	88.353			
19	0.369	1.086	89.439			
20	0.365	1.075	90.514			
21	0.360	1.060	91.574			
22	0.342	1.005	92.579			
23	0.310	0.913	93.492			
24	0.303	0.890	94.382			
25	0.288	0.848	95.230			
26	0.264	0.778	96.008			
27	0.233	0.685	96.693			
28	0.202	0.596	97.289			
29	0.191	0.561	97.850			
30	0.180	0.529	98.379			
31	0.169	0.498	98.877			
32	0.165	0.486	99.363			
33	0.140	0.412	99.776			
34	0.076	0.224	100.000			

Note. Extraction method: Principal Axis Factoring.

Appendix S

Standardized Regression Weights of Models with and without Common Latent Factor

	Standardized regression weights: (with CLF)		Standardized regression weights: (without CLF)	Difference
	Estimate 1 (E1)		Estimate 2 (E2)	E2-E1
Demotivation ← Motivation	.362	Demotivation ← Motivation	.339	-.023
External ← Motivation	-.332	External ← Motivation	-.344	-.012
Introjected ← Motivation	-.914	Introjected ← Motivation	-.913	.001
Identified ← Motivation	-.988	Identified ← Motivation	-.990	-.002
Integrated ← Motivation	-.834	Integrated ← Motivation	-.836	-.002
Intrinsic ← Motivation	-.863	Intrinsic ← Motivation	-.867	-.004
M12 ← Demotivation	.628	M12 ← Demotivation	.624	-.004
M17 ← Demotivation	.746	M17 ← Demotivation	.760	.014
M2 ← External	.691	M2 ← External	.700	.009
M9 ← External	.963	M9 ← External	.964	.001
M6 ← Introjected	.700	M6 ← Introjected	.704	.004
M11 ← Introjected	.845	M11 ← Introjected	.851	.006
M1 ← Identified	.517	M1 ← Identified	.530	.013
M7 ← Identified	.662	M7 ← Identified	.667	.005
M14 ← Identified	.764	M14 ← Identified	.77	.006
M4 ← Intrinsic	.638	M4 ← Intrinsic	.650	.012
M8 ← Intrinsic	.827	M8 ← Intrinsic	.835	.008
M15 ← Intrinsic	.695	M15 ← Intrinsic	.706	.011
M5 ← Integrated	.862	M5 ← Integrated	.865	.003
M10 ← Integrated	.679	M10 ← Integrated	.687	.008
M18 ← Integrated	.830	M18 ← Integrated	.837	.007
P5 ← Procedural	.709	P5 ← Procedural	.716	.007
P4 ← Procedural	.778	P4 ← Procedural	.781	.003
P3 ← Procedural	.666	P3 ← Procedural	.674	.008
D4 ← Distributive	.852	D4 ← Distributive	.859	.007
D3 ← Distributive	.852	D3 ← Distributive	.858	.006

Standardized regression weights: (with CLF)		Standardized regression weights: (without CLF)		Difference
Estimate 1 (E1)		Estimate 2 (E2)		E2-E1
D2 ← Distributive	.774	D2 ← Distributive	.780	.006
D1 ← Distributive	.767	D1 ← Distributive	.774	.007
I4 ← Interactional	.676	I4 ← Interactional	.682	.006
I3 ← Interactional	.962	I3 ← Interactional	.968	.006
I2 ← Interactional	.774	I2 ← Interactional	.781	.007
I1 ← Interactional	.890	I1 ← Interactional	.896	.006
A4 ← Accuracy	.825	A4 ← Accuracy	.831	.006
A3 ← Accuracy	.826	A3 ← Accuracy	.833	.007
A2 ← Accuracy	.861	A2 ← Accuracy	.869	.008
A1 ← Accuracy	.824	A1 ← Accuracy	.834	.010
S2 ← Satisfaction	.714	S2 ← Satisfaction	.727	.013
S1 ← Satisfaction	.686	S1 ← Satisfaction	.696	.010
S7 ← Satisfaction	.596	S7 ← Satisfaction	.606	.010
P2 ← Procedural	.675	P2 ← Procedural	.689	.014

Note. CLF = common latent factor.

Appendix T

Total Variance Explained

Factor	Initial eigenvalues			Extraction sums of squared loadings			Rotation sums of squared loadings
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total
1	9.474	27.866	27.866	9.079	26.704	26.704	6.268
2	4.483	13.184	41.050	4.070	11.970	38.674	6.681
3	2.434	7.160	48.210	2.098	6.171	44.845	4.649
4	2.001	5.886	54.096	1.642	4.829	49.674	4.837
5	1.462	4.301	58.397	1.098	3.230	52.904	2.805
6	1.413	4.156	62.553	0.988	2.906	55.810	4.632
7	1.157	3.403	65.957	0.736	2.164	57.974	1.639
8	1.111	3.267	69.224				
9	0.990	2.913	72.136				
10	0.929	2.731	74.868				
11	0.773	2.272	77.140				
12	0.640	1.881	79.021				
13	0.605	1.781	80.802				
14	0.603	1.775	82.576				
15	0.560	1.647	84.223				
16	0.510	1.499	85.722				
17	0.477	1.402	87.124				
18	0.418	1.229	88.353				
19	0.369	1.086	89.439				
20	0.365	1.075	90.514				
21	0.360	1.060	91.574				
22	0.342	1.005	92.579				
23	0.310	0.913	93.492				
24	0.303	0.890	94.382				
25	0.288	0.848	95.230				
26	0.264	0.778	96.008				
27	0.233	0.685	96.693				
28	0.202	0.596	97.289				
29	0.191	0.561	97.850				
30	0.180	0.529	98.379				
31	0.169	0.498	98.877				
32	0.165	0.486	99.363				
33	0.140	0.412	99.776				
34	0.076	0.224	100.000				

Note. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.
Extraction method: Principal Axis Factoring.

Appendix U

Pattern Matrix

Items	Factor						
	1	2	3	4	5	6	7
M5	.840	.000	.057	.060	-.170	-.062	.122
M18	.821	-.033	.201	.037	-.193	-.130	.008
M14	.748	-.066	-.013	.000	.026	.037	.065
M8	.705	.009	-.151	-.034	.106	.196	-.114
M11	.695	.062	-.006	-.094	.107	.030	.063
M10	.647	-.076	.182	-.067	-.070	-.037	.016
M7	.584	.031	-.016	-.015	.174	-.051	.000
M15	.573	.044	-.161	.098	.158	.126	-.182
M4	.556	.116	-.206	.067	-.052	.093	.018
M1	.556	.004	.010	-.020	.011	-.001	-.039
M6	.540	.089	.008	-.099	.186	-.050	.087
A2	-.019	.865	.042	-.109	.103	-.011	.104
A1	-.062	.864	-.013	.053	.043	-.061	-.052
A4	-.083	.831	.078	-.040	-.034	.007	.041
A3	.127	.780	.053	.038	-.042	-.068	.017
S7	.040	.560	-.077	.001	-.136	.174	-.145
S2	.144	.533	-.009	.095	.025	.009	-.007
S1	.084	.488	.033	.117	-.109	.009	-.050
D3	.004	.031	.877	.013	.001	-.034	-.069
D4	.017	.113	.763	.050	.008	.029	-.045
D2	-.061	.007	.726	.002	.090	.076	.013
D1	.002	-.026	.699	-.068	.087	.181	-.065
I3	.028	.034	.001	.986	-.005	-.084	.019
I1	-.053	.087	-.059	.842	.041	-.007	.010
I2	-.009	-.031	-.008	.785	.079	.042	-.055
I4	-.045	.026	.087	.641	-.066	.084	.087
M9	.076	-.012	.047	-.020	.833	-.015	-.043

Items	Factor						
	1	2	3	4	5	6	7
M2	.035	-.089	.146	.087	.722	-.154	.147
P3	.063	-.003	.090	-.057	-.164	.766	.127
P4	-.077	.035	.244	.125	-.020	.606	.027
P5	-.079	.244	.098	.149	.040	.405	.120
P2	.199	-.002	.264	.089	.107	.405	-.063
M12	.019	.038	.091	.032	-.059	-.129	-.793
M17	-.111	.002	.080	-.107	-.030	-.047	-.525

Note. Items' belonging to each factor is shown in boldface. Extraction method: Principal Axis Factoring. Rotation method: Promax with Kaiser Normalization. Rotation converged in 6 iterations.

Appendix V

Communalities

Items	Initial	Extraction
M1	.466	.306
M2	.622	.589
M4	.528	.396
M5	.709	.714
M6	.561	.422
M7	.525	.411
M8	.632	.614
M9	.616	.725
M10	.576	.417
M11	.630	.592
M12	.383	.641
M14	.606	.578
M15	.542	.478
M17	.374	.343
M18	.666	.646
P2	.545	.524
P3	.531	.612
P4	.653	.629
P5	.549	.515
D1	.624	.598
D2	.654	.609
D3	.719	.763
D4	.704	.714
I1	.828	.763
I2	.689	.645
I3	.870	.946
I4	.626	.519
S1	.578	.334
S2	.576	.427
S7	.497	.384
A1	.710	.713
A2	.752	.766
A3	.715	.698
A4	.691	.681

Note. Extraction method: Principal Axis Factoring.

Appendix W

Curve-Linear Regression Results

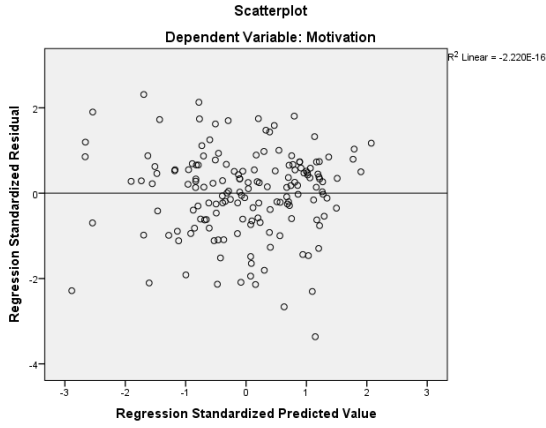
Independent variable	Dependent variable	Relation	R^2	F	ρ
Accuracy	Motivation	Linear	.165	31.319	.000
Accuracy	Satisfaction	Linear	.787	587.184	.000
Accuracy	Procedural	Linear	.467	139.501	.000
Accuracy	Distributive	Linear	.288	64.347	.000
Accuracy	Interactional	Linear	.247	52.150	.000
Procedural	Motivation	Linear	.189	37.079	.000
Procedural	Satisfaction	Linear	.473	142.581	.000
Distributive	Motivation	Linear	.055	9.320	.003
Distributive	Satisfaction	Linear	.217	44.167	.000
Interactional	Motivation	Sufficiently linear	.021	3.328	.070
Interactional	Satisfaction	Sufficiently linear	.333	79.533	.000
Satisfaction	Motivation	Linear	.212	42.792	.000

Note. R^2 = coefficient of determination. F = F statistics. ρ = probability value.

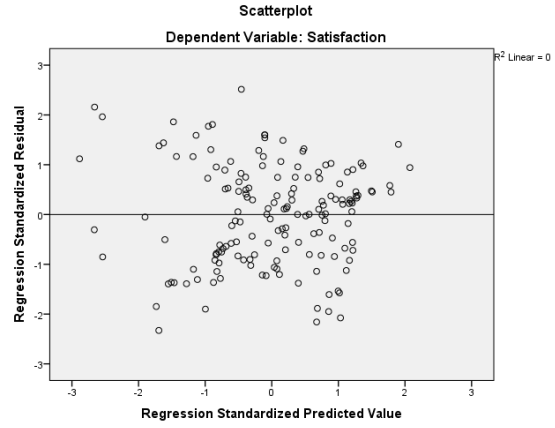
Appendix X

Scatterplots of Residuals Against Predicted Scores

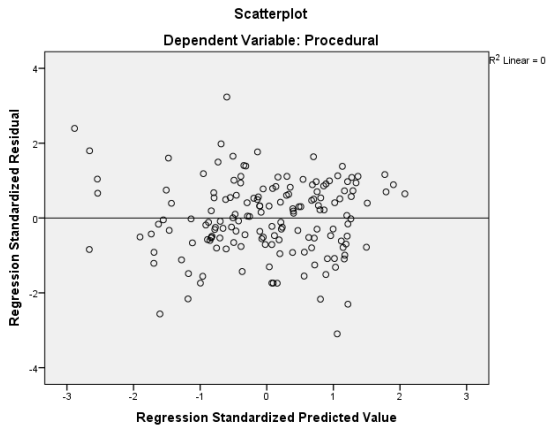
Accuracy ← Motivation



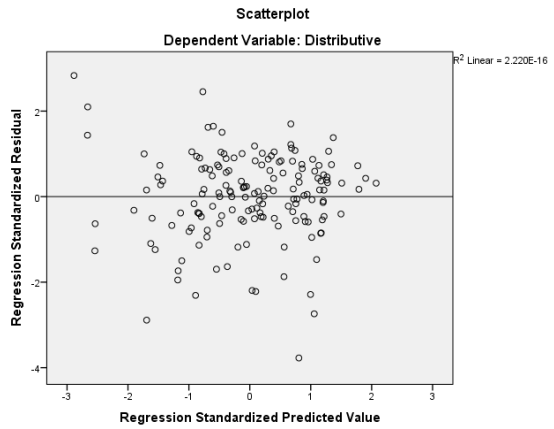
Accuracy ← Satisfaction



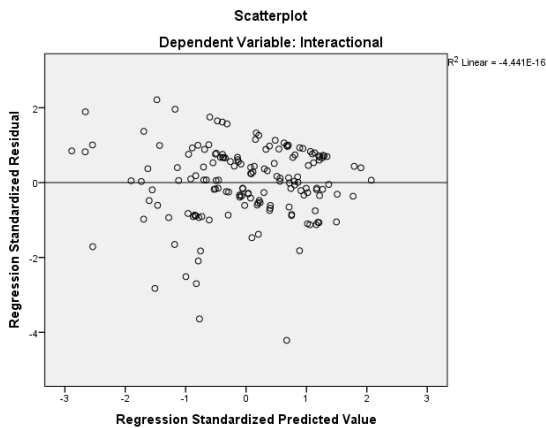
Accuracy ← Procedural



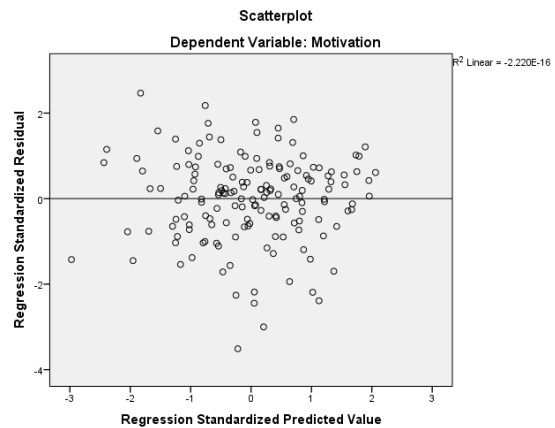
Accuracy ← Distributive



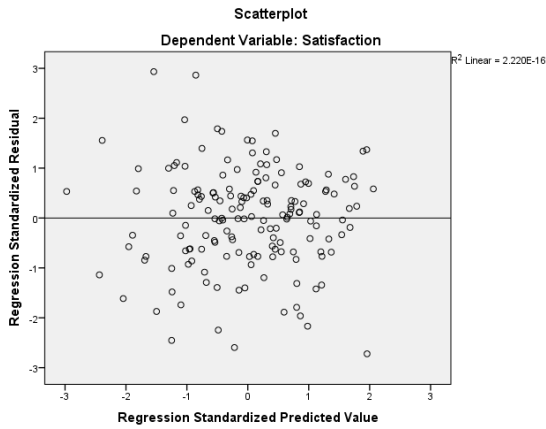
Accuracy ← Interactional



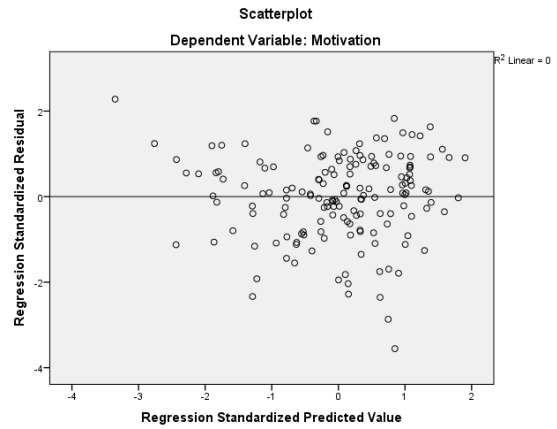
Procedural ← Motivation



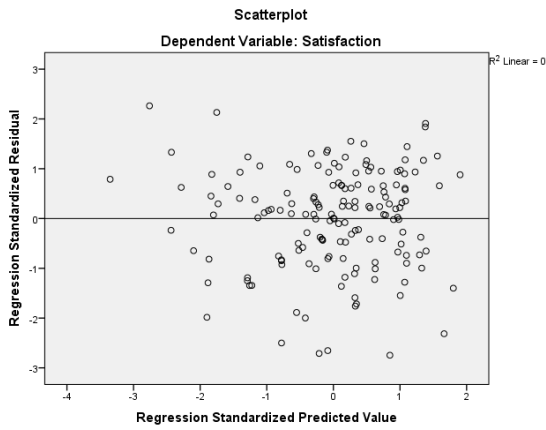
Procedural ← Satisfaction



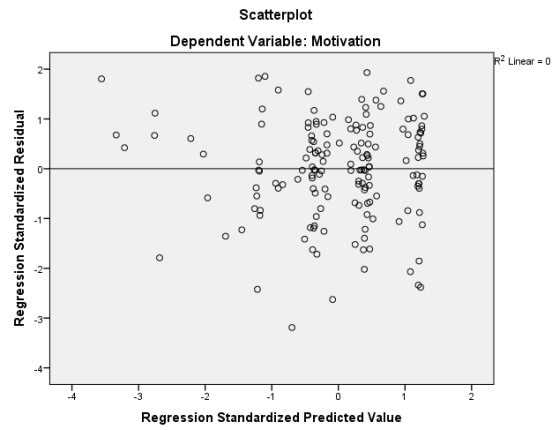
Distributive ← Motivation



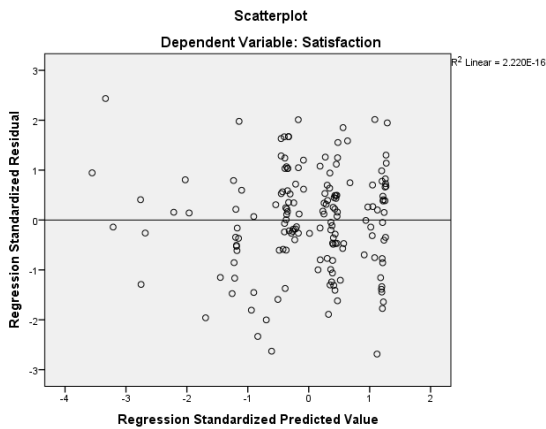
Distributive ← Satisfaction



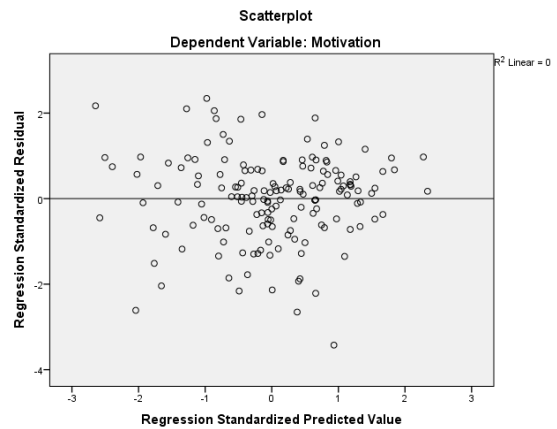
Interactional ← Motivation



Interactional ← Satisfaction



Satisfaction ← Motivation



Appendix Y

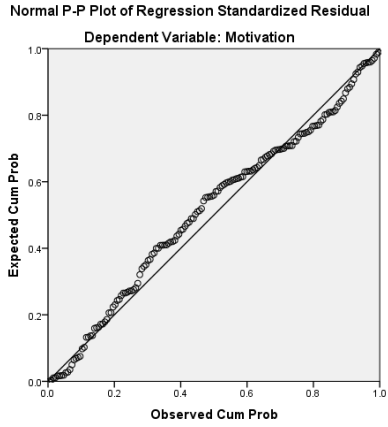
Durbin-Watson Statistic

Independent variable	Dependent variable	Durbin-Watson
Accuracy	Motivation	2.074
Accuracy	Satisfaction	1.997
Accuracy	Procedural	1.874
Accuracy	Distributive	1.975
Accuracy	Interactional	2.109
Procedural	Motivation	2.076
Procedural	Satisfaction	2.011
Distributive	Motivation	2.086
Distributive	Satisfaction	1.930
Interactional	Motivation	2.042
Interactional	Satisfaction	1.949
Satisfaction	Motivation	2.114

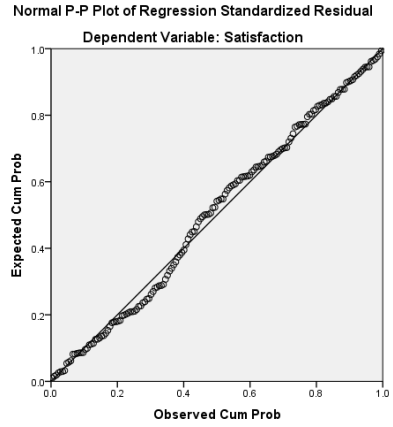
Appendix Z

Normal Probability-Probability Plots

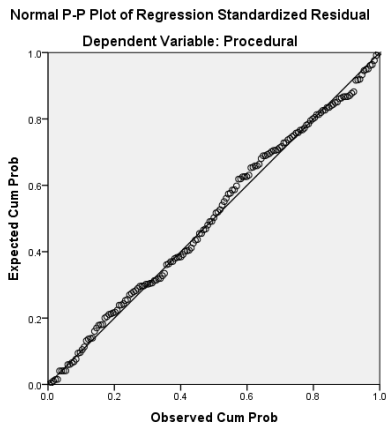
Accuracy ← Motivation



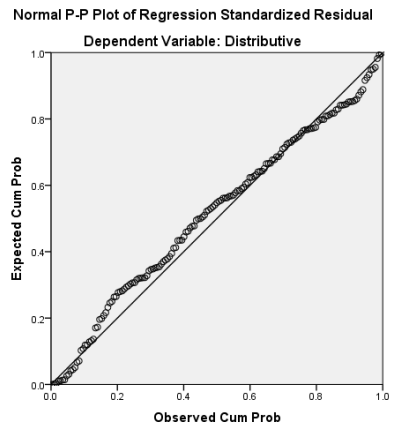
Accuracy ← Satisfaction



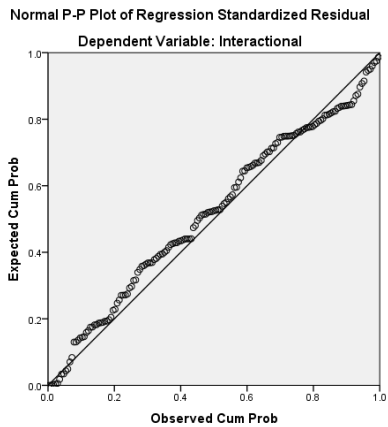
Accuracy ← Procedural



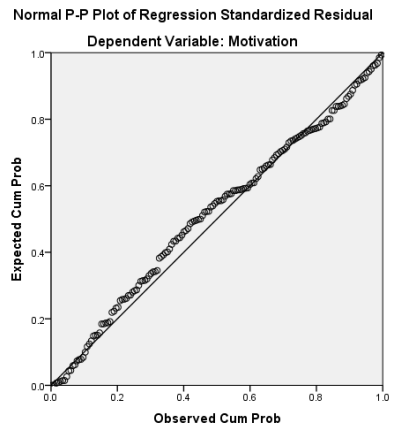
Accuracy ← Distributive



Accuracy ← Interactional

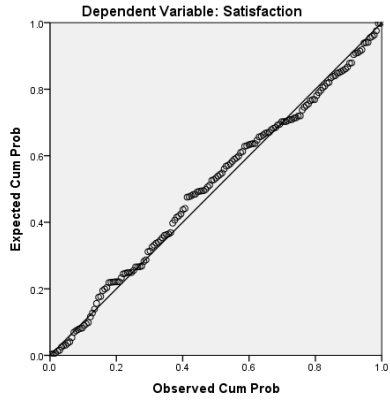


Procedural ← Motivation



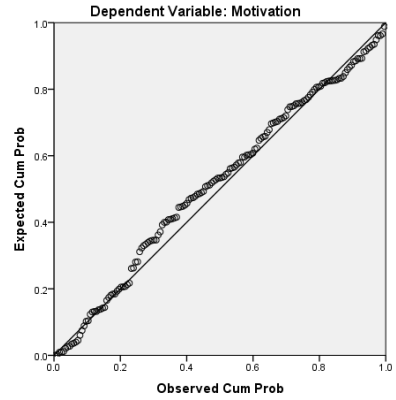
Procedural ← Satisfaction

Normal P-P Plot of Regression Standardized Residual



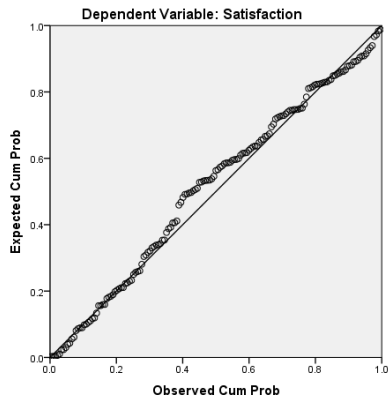
Distributive ← Motivation

Normal P-P Plot of Regression Standardized Residual



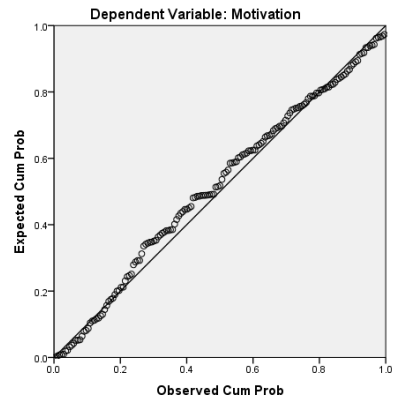
Distributive ← Satisfaction

Normal P-P Plot of Regression Standardized Residual



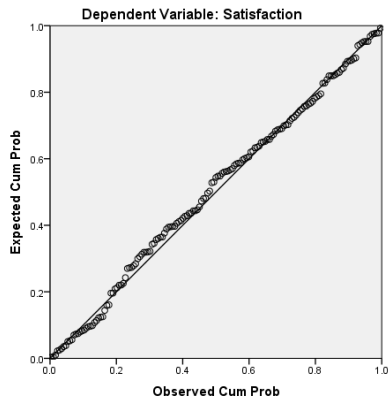
Interactional ← Motivation

Normal P-P Plot of Regression Standardized Residual



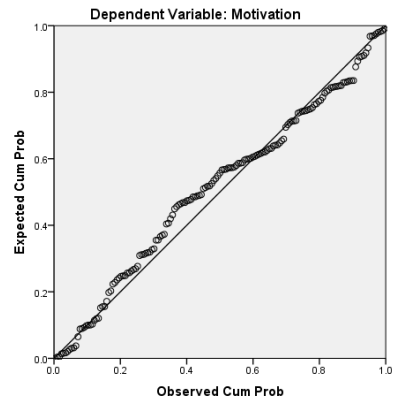
Interactional ← Satisfaction

Normal P-P Plot of Regression Standardized Residual



Satisfaction ← Motivation

Normal P-P Plot of Regression Standardized Residual



Appendix AA

Multicollinearity Statistics

Dependent variable	Independent variable	Tolerance value	VIF
Satisfaction	Accuracy	.512	1.953
	Procedural	.288	3.478
	Interactional	.610	1.639
	Distributive	.452	2.212
Accuracy	Satisfaction	.482	2.076
	Procedural	.278	3.600
	Interactional	.578	1.729
	Distributive	.458	2.183
Procedural	Accuracy	.193	5.185
	Satisfaction	.188	5.326
	Interactional	.660	1.515
	Distributive	.706	1.417
Interactional	Accuracy	.193	5.171
	Procedural	.318	3.145
	Satisfaction	.192	5.210
	Distributive	.451	2.218
Distributive	Accuracy	.200	5.004
	Procedural	.443	2.256
	Interactional	.588	1.701
	Satisfaction	.185	5.392

Note. VIF = variance of inflation factors.

Appendix AB

Correlation Matrix

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Satisfaction with performance appraisal	4.16	.674	1											
2. Perceived accuracy	4.97	.974	.887**	1										
3. Interactional fairness	4.34	.969	.577**	.497**	1									
4. Distributive fairness	4.56	1.023	.466**	.537**	.323**	1								
5. Procedural fairness	4.59	.808	.688**	.684**	.589**	.725**	1							
6. Motivation	1.61	.302	.460**	.406**	.143	.235**	.435**	1						
7. Integrated regulation	5.21	1.235	.390**	.346**	.101	.215**	.360**	.906**	1					
8. Intrinsic motivation	5.31	.932	.439**	.371**	.176*	.177*	.407**	.939**	.806**	1				
9. Identified regulation	3.50	.659	.456**	.399**	.140	.232**	.430**	.979**	.904**	.936**	1			
10. Introjected regulation	4.87	.999	.419**	.390**	.114	.230**	.402**	.972**	.853**	.898**	.968**	1		
11. External regulation	3.38	.900	.211**	.239**	.151	.273**	.335**	.375**	.234**	.340**	.374**	.361**	1	
12. Demotivation	1.19	.763	-.231**	-.210**	-.184*	-.117	-.281**	-.419**	-.353**	-.344**	-.417**	-.405**	-.181*	1

Note. M = median. SD = standard deviation. ** $p < .01$, two-tailed. * $p < .05$, two-tailed.

Appendix AC

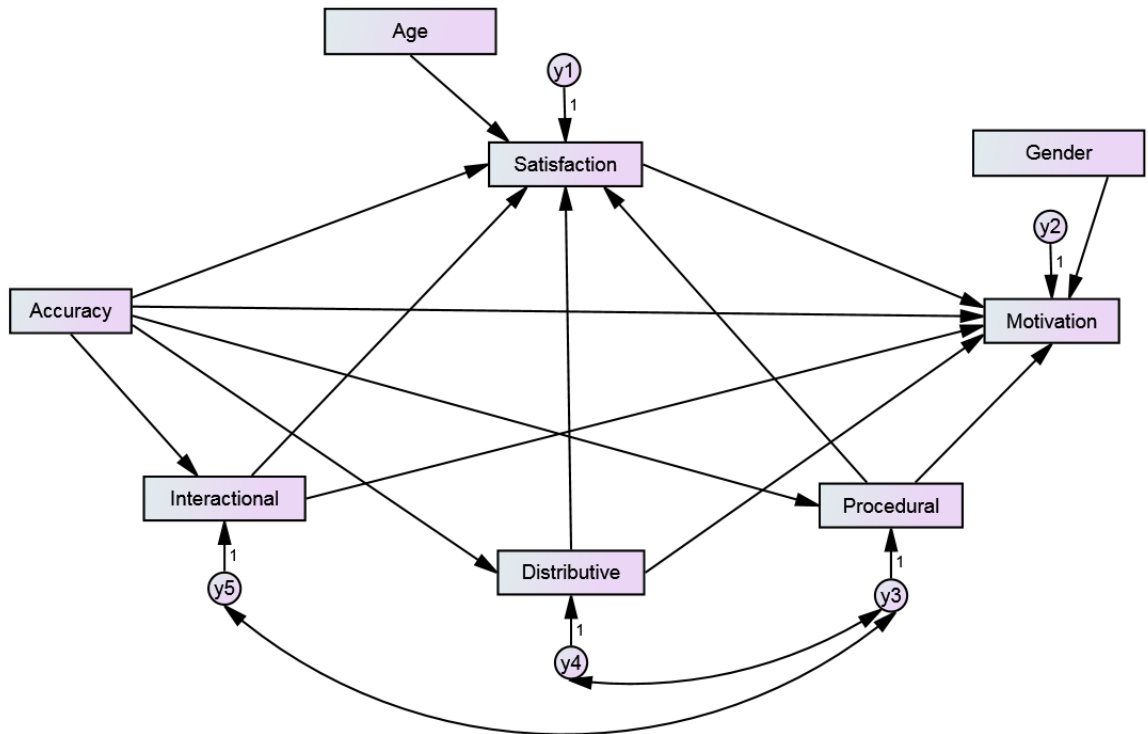
Summary of the Rejections of the Null Hypotheses

H_0	Items	r	ρ	Decision
H_{01a}	Distributive fairness and motivation	.235	.003	H_{01a} is rejected in favor of H_{1a} at the 99% confidence level
H_{01b}	Procedural fairness and motivation	.435	.000	H_{01b} is rejected in favor of H_{1b}
H_{01c}	Interactional fairness and motivation	.143	.070	H_{01c} cannot be rejected in favor of H_{1c} since there is not enough evidence available to suggest the H_{01c} is false at the 95% confidence level
H_{02a}	Distributive fairness and satisfaction	.466	.000	H_{02a} is rejected in favor of H_{2a} at the 99% confidence level
H_{02b}	Procedural fairness and satisfaction	.688	.000	H_{02b} is rejected in favor of H_{2b} at the 99% confidence level
H_{02c}	Interactional fairness and satisfaction	.577	.000	H_{02c} is rejected in favor of H_{2c} at the 99% confidence level
H_{03a}	Perceived accuracy and distributive fairness	.537	.000	H_{03a} is rejected in favor of H_{3a} at the 99% confidence level
H_{03b}	Perceived accuracy and procedural fairness	.684	.000	H_{03b} is rejected in favor of H_{3b} at the 99% confidence level
H_{03c}	Perceived accuracy and interactional fairness	.497	.000	H_{03c} is rejected in favor of H_{3c} at the 99% confidence level
H_{04}	Perceived accuracy and appraisal satisfaction	.887	.000	H_{04} is rejected in favor of H_4 at the 99% confidence level
H_{05}	Perceived accuracy and motivation	.406	.000	H_{05} is rejected in favor of H_5 at the 99% confidence level
H_{06}	Appraisal satisfaction and motivation	.460	.000	H_{06} is rejected in favor of H_6 at the 99% confidence level

Note. H_0 = null hypothesis. r = Pearson correlation. ρ = probability value.

Appendix AD

Path Model of the Impact of Performance Appraisal on Employees' Motivation with Two Control Variables: Gender and Age



Appendix AE

Revised Model Statistics

Direction of relationship	Estimate	S.E.	C.R.	ρ
Interactional ← Accuracy	.495	.068	7.244	***
Distributive ← Accuracy	.564	.070	8.047	***
Procedural ← Accuracy	.568	.047	12.029	***
Satisfaction ← Accuracy	.531	.032	16.336	***
Satisfaction ← Interactional	.095	.030	3.178	.001
Satisfaction ← Distributive	-.069	.033	-2.088	.037
Satisfaction ← Procedural	.132	.052	2.530	.011
Motivation ← Interactional	-.097	.027	-3.583	***
Motivation ← Distributive	-.062	.029	-2.152	.031
Motivation ← Procedural	.186	.047	3.982	***
Motivation ← Satisfaction	.177	.043	4.161	***

Note. S.E. = standard error. C.R. = critical ratio. ρ = probability value. *** $\rho < .001$.

Appendix AF

Model Estimates and Summary Decisions on Stated Hypotheses in Revised Model

H	Direction of impact	SRW	ERW	R ²	C.R.	ρ	Decision
H _{1a}	Motivation ← Distributive	-.210	-.062	.044	-2.152	.031	Rejected
H _{1b}	Motivation ← Procedural	.494	.186	.244	3.982	***	Confirmed
H _{1c}	Motivation ← Interactional	-.311	-.097	.096	-3.583	***	Rejected
H _{2a}	Satisfaction ← Distributive	-.104	-.069	.011	-2.092	.037	Rejected
H _{2b}	Satisfaction ← Procedural	.157	.132	.025	2.530	.011	Partially confirmed
H _{2c}	Satisfaction ← Interactional	.137	.095	.019	3.186	.001	Partially confirmed
H _{3a}	Distributive ← Accuracy	.537	.564	.288	8.047	***	Confirmed
H _{3b}	Procedural ← Accuracy	.689	.568	.474	12.029	***	Confirmed
H _{3c}	Interactional ← Accuracy	.497	.495	.247	7.244	***	Confirmed
H ₄	Satisfaction ← Accuracy	.767	.531	.588	16.123	***	Confirmed
H ₆	Motivation ← Satisfaction	.395	.177	.156	4.161	***	Confirmed

Note. Hypothesis H₅ was rejected. Values that affected the decisions to reject or partially reject hypotheses are in boldface. H = hypothesis. SRW = standardized regression weight. ERW = estimated regression weight. R² = coefficient of determination. C.R. = critical ratio. ρ = probability value. *** ρ < .001.