

Rewards in public administration: A proposed classification

By Mario COCCIA^{af} & Benati IGOR^b

Abstract. Social and administrative sciences categorize rewards with some dimensions. However, these interpretative models seem to be elusive because they do not consider all the elements of rewards system within public administration. The goal of this paper is to suggest a new classification considering formality, tangibility and also legality in order to create a comprehensive interpretative model in public sector. This theoretical framework begins the process of clarifying and generalizing, as far as possible, the manifold elements of rewards system in public administration to lay a foundation for the development of more sophisticated taxonomies and theories directed to fruitful management implications.

Keywords. Monetary rewards, Compensation, Salary, Seat of power, Pay, Bribe, Reputation, Abuse of power.

JEL. B29, L29, L30, L32, M12, M19, M50.

1. Introduction

The research field of rewards in contemporary human resource management and administrative sciences is developed on behavioural research in psychology (Armstrong, 2007). These studies analyze how people react to rewards and what motivates them to work in organizations (Reif, 1975). In general, the concept of rewards is associated with the concept of motivation, which indicates the forces that energize, direct and sustain behaviour of individuals (Perry & Porter, 1982). Rewards systems in organizations are processes, policies and strategies to motivate subjects to achieve strategic goals and enhance the productivity and efficiency of organizations (Armstrong, 2007; Reif, 1975). In public administration, appropriate rewards can enhance motivation and performance of civil servants (cf., Aberbach *et al.*, 1981; Wittmer, 1991). A complete rewards strategy in public organizations should achieve two goals:

- motivate performance of individuals
- support job satisfaction and commitment

In public administration studies, the research field of reward management has the general purpose of designing best practices of remuneration to support performance of individuals and efficiency of organizations. This approach in the USA is called the New Pay (Schuster & Zingheim 1992).

In this context, the study and classification of rewards are a central and enduring research theme in public administration to support theoretical and analytical studies and appropriate management implications in organizations (cf., Hood *et al.*, 2002; Coccia, 2006). In particular, scholars of public administration

^{af} Arizona State University, Interdisciplinary Science and Technology Building 1 (ISBT1) 550 E. Orange Street, Tempe- AZ 85287-4804 USA.

☎ + 85287-4804

✉ mario.coccia@cnr.it

^b CNR -- National Research Council of Italy, Italy.

✉ igor.benati@ircres.cnr.it

have analyzed many elements and characteristics of rewards and also organized them in classifications and/or taxonomies (Hood & Peters, 1994; cf., Armstrong & Murlis, 2004; Armstrong & Stephens, 2005; Mitchell, 1982; Coccia, 2001). In science, although the concepts of “classification” and “taxonomy” are almost synonyms, they have different meaning. The term taxonomy (from ancient Greek word *taxon*=arrangement, array) refers to a branch of systematics based on the theory and practice of producing classification schemes with the aim of maximizing the differences among groups. Thus, a taxonomic process provides rules on how to form and represent groups in classifications. Instead, classification is the product of the taxonomic process that represents classes of entities with a matrix, or a table, or a dendrogram, etc. (McKelvey, 1982). Taxonomy has usefulness in natural and social sciences if it is able to reduce the complexity of the population studied into simple classes, which are represented by a classification. Specifically, social sciences have two general approaches to create a classification: the empirical and theoretical one (Rich, 1992; Doty & Glick, 1994). Theoretical classifications in social sciences begin by developing a theory of differences, which then results in a classification of typologies. The empirical approach begins by gathering data about the entities under study that are then processed using statistical techniques to produce groups with measures of similarity, such as Euclidean distance (Coccia, 2006).

The subject matter of this study here is taxonomy of rewards in public administration. Some studies of public administration categorize some typologies of rewards (Hood & Peters, 1994; Gkorezis & Panagiotis, 2008) but a comprehensive taxonomy based on manifold dimensions of rewards systems is still hardly known.

This paper has two goals. The first is to propose a new taxonomy of rewards systems in public administration based on characteristics of legality, formality and tangibility. The second is to explain each single element of this taxonomy in relation to civil servants. Practical implications of this study are management practices directed to improve motivation of individuals and efficiency of institutions in public administration. Moreover, this study can encourage further theoretical and empirical explorations for the development of more sophisticated concepts and taxonomies in the domain of public organizations.

2. Theoretical framework

The term ‘reward’ comes from Middle English *meed*, *mede* (“reward, meed, recompense”). In the field of human resource management, the concepts of reward, compensation and remuneration are used interchangeably. In the USA the term compensation is used more than reward (White, 2016). In general, rewards are a system of elements to compensate performance of subjects and incentivize their motivation within organizations (Benati & Coccia, 2018). Rewards systems can include tangible elements (e.g., remuneration and other benefits) and intangible elements (e.g., reputation, job responsibility).

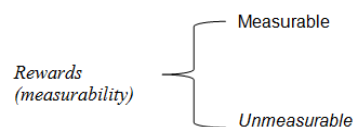
Specifically, rewards within public organizations have a powerful effect on performance, motivation, commitment and satisfaction of public officials and civil servants towards achieving strategic goals (Bowman, 2010; O’Reilly *et al.*, 1991). A main element of the rewards systems is the pay that is given by organizations to employees for contribution to working toward the achievement of goals (Heneman & Judge, 2000; Milkovitch & Newman, 2004). Pay is often used as an incentive for performance (Gardner *et al.*, 2004) and as a mean to retain the best employees (Trevor *et al.*, 1997; Heneman & Judge, 2000; Tekleab *et al.*, 2005; Currall *et al.*, 2005; Motowidlo, 1983; Vandenberghe & Tremblay, 2008). The effects of under reward, as expressed in justice theory (Heneman & Judge, 2000), have also received considerable attention in literature in order to demonstrate the behavioural implications of perceived injustice in reward allocation (Greenberg & Wiethoff, 2001). In fact, theory and empirical evidence suggest behavioural implications from pay satisfaction or dissatisfaction (Gerhart & Rynes, 2003).

Several features of public organizations affect reward systems. White (2016, p.3-4) identifies four characteristics. First, public accountability affects the design of reward systems since public servants are under the direct control of the government; their salaries are paid for through taxation and jobs are redirected to supply public services for the benefit of citizens and society. In fact, public sector provides services that tend to be public goods: they transcend commercial and economic goals and are aimed to “social utility that benefits all and excludes none” (Beszter, 2016, p.356). Second, public sector tends to be labour rather than capital intensive. As a matter of fact, the reduction of personnel in public organization can generate a reduction of the quantity and quality of public services. Third, as said, many public services can be a public good (being non-rivalrous and non-excludable) that generates local or national monopolies, or natural monopolies in specific sectors with high infrastructural costs, such as water and electricity. Public services have also market failures and need government regulation. Fourth, high level of union membership in the public services of many countries has generated centralized and bureaucratic approaches to reward design, determined through collective bargaining or statutory means. In fact, pay determination and reward systems for civil servants and bureaucrats are different from private sector because based on a national bargain, such as between trade unions and central government and/or specific departments. Finally, civil servants should be motivated by the concept of public service rather than income maximization. This feature influences the design of reward policies in public administration that are mainly based on career development, equity of treatment, recognition of service and loyalty rather than monetary incentives for high performance (Plant, 1993). Hence, in the public sector, reward system is bureaucratic with uniformity in pay progression systems. In fact, additional and variable pay *ad personam* have been very limited in public organizations, except in sector where there is a competition with the private sector, such as public broadcasting (cf., White, 2016). Benefits in public administration are also the provision of generous pension entitlement, though pay and pension determination methods for civil servants and bureaucrats vary considerably between countries.

White (2016) identifies three main ways of monetary reward changes in the European and US public sector: (1) changes in the method and locus of pay determination, (2) changes in grading and job classification, and (3) changes in pay progression systems.

In public administration studies, rewards can be categorized considering different characteristics.

- As far as the feature of *measurability* is concerned, rewards can be:
-

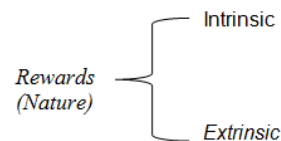


- *Measurable* rewards are tangible elements measured through monetary units (e.g., pay) and/or other units of the metric system. Monetary rewards are effective if they are supported by better performance appraisal systems, but such systems are often inadequate in public organizations (Andersen & Pallesen, 2008). The impact of financial rewards on performance depends on positive price effect and on negative crowding-out effect. These effects of monetary rewards for civil servants can be weaker than private sector employees for two causes. Firstly, the public sector cannot offer substantial incentives similar to private sector, due to the institutional characteristics of public organizations. Secondly, civil servants tend to be more intrinsically motivated than private sector employees (Belle & Cantarelli, 2015, p.12ff). This result is consistent with the analysis by Weibel *et al.*, (2010) that shows how the effect of financial incentives on performance is stronger with

non-interesting rather than interesting tasks (cf., Grant & Shin, 2012; Ryan & Deci, 2000, 2000a).

- *Unmeasurable* rewards are intangible elements difficult to measure, such as job responsibility, professionalism, etc. Perry & Porter (1982) and Rainey *et al.*, (1976) argue that monetary rewards are less important than no pecuniary rewards. Some scholars state that: “less tangible rewards of praise and recognition have to be supplemented by more tangible ones” (Kernaghan, 2001, p.79).

Lincoln & Kalleberg (1990) have argued that the rewards offered by an organization may have a powerful effect on employees’ attitudes towards their job and the organization for which they work. Perry & Hondeghem (2008, p.vii) claim that: “people are selfish and altruistic and organizations need to use intrinsic as well as extrinsic incentives to motivate employees”. In this context, it is also important to distinguish between intrinsic and extrinsic rewards.



➤ *Intrinsic rewards* are those that exist in the job itself and give personal satisfaction to individuals, such as autonomy, recognition, expense preference (e.g., leeway to invest monetary resources), trust and empowerment. In particular, intrinsic rewards generate positive effects on job involvement, satisfaction and affective commitment (O’Driscoll & Randall, 1999).

➤ *Extrinsic rewards* are tangible and visible rewards given to individuals for achieving goals. They usually include elements, such as pay and fringe benefits, gifts, promotion or advancement opportunities, etc. within the organization. Studies have investigated whether and how extrinsic rewards undermine public employee motivation, generating a crowding-out effect that decreases their effort and performance (e.g., Georgellis *et al.*, 2011; Weibel *et al.*, 2010). Extrinsic rewards, based on contractual obligations, may be ineffectual and counterproductive in the public sector because when public servant’s effort has high-powered incentives with pay for performance, it can crowd out public service motivation (cf., Frey & Jegen, 2001; Francois, 2000).

O’Reilly *et al.*, (1991) have suggested that intrinsic rewards may be more salient for affective commitment, job involvement and motivation of subjects in organizations, whereas extrinsic rewards are more likely to be important in relation to continuance commitment to the organization.

Frey & Jegen (2001) also show that extrinsic incentives (e.g., monetary rewards) can crowd out intrinsic motivation of individuals, resulting in lower organizational productivity. In fact, studies confirm that extrinsic rewards can reduce intrinsic motivation, such as Bénabou & Tirole (2003) show conditions under which explicit (high-powered) incentives rewards crowd out performance, compared to low-powered alternatives (cf., Langbein, 2010). Moreover, empirical evidence suggests that both extrinsic and intrinsic motivations can be effective in deterring corruption (cf., Georgellis *et al.*, 2010; Houston, 2006; Ryan & Deci, 2000; Titmuss, 1970). In general, studies show that in mission-oriented organizations, extrinsic rewards crowd out intrinsic rewards (Hartwig, 2004; Frey, 1993, 1997; Frey & Oberholzer-Gee, 1997; Kreps, 1997). According to the insufficient justification effect (in which both intrinsic and extrinsic rewards are low), people may change their self-perception and claim that they do it for the intrinsic value of their job (Staw 1976; Liu & Tang, 2011).

Hood & Peters (1994) in this research field argue that rewards systems are characterized by two dimensions, formality and tangibility. The first dimension, *formality*, deals with the extent to which the rewards of office are officially sanctioned and transparent. The second dimension of rewards is *tangibility*, when

elements have a physical form that can be perceived and touched by subjects, vice versa is intangible (Benati & Coccia, 2018). These two dimensions of rewards systems generate a 2x2 matrix displaying each element in a cell, as represented in Figure 1 by Hood & Peters (1994, as quoted by Brans & Peters, 2012, p.4).

		Formality	
		Formal	Informal
Tangibility	Tangible	Salary	Post-governmental employment
	Intangible	Medals	Respect

Figure 1. Dimensions of rewards by Hood & Peters (1994, as quoted by Brans & Peters, 2012, p.4)

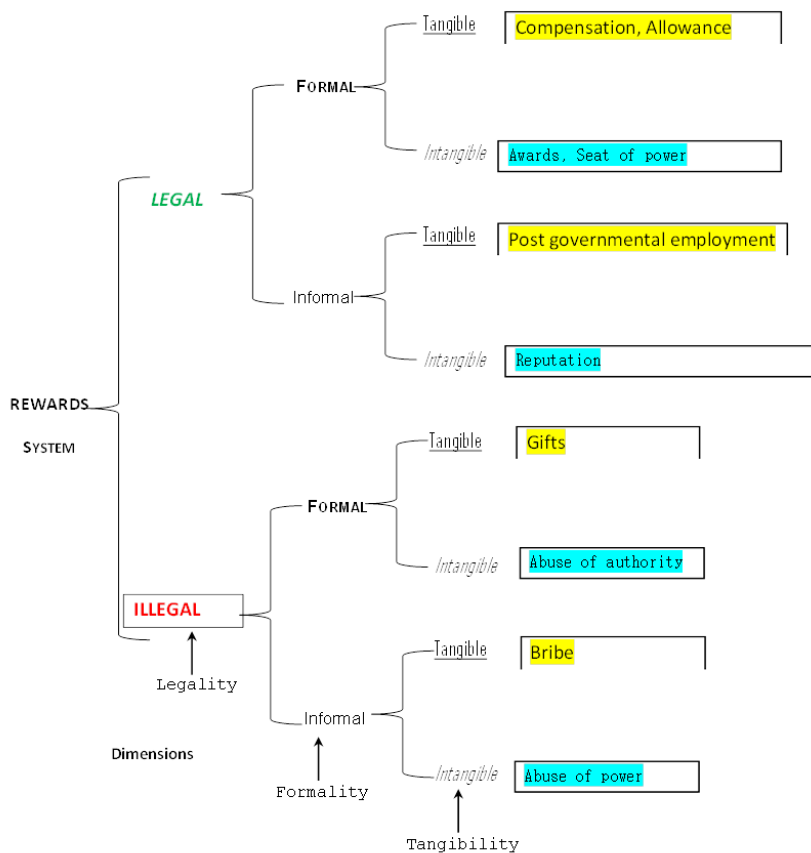


Figure 2. Classification of the elements of rewards system in public administration with taxonomic criteria of legality, formality and tangibility

3. Towards a taxonomy and theory of rewards systems in public administration including *legality*

The interpretative model by Hood & Peters (1994) and other classifications just mentioned include only legal elements of rewards systems. These models can also be integrated with the dimension of *legality*, allowing further categorizing the elements of rewards systems into legal and illegal, in order to detect good and bad practices in public sector (cf., Benati & Coccia, 2017; 2018). In fact, this study proposes a new classification of rewards system in public administration based on

taxonomic criteria of Legality, Formality and Tangibility. Figure 2 shows this classification with main elements of rewards systems in public administration.

** Description of the elements of the classification of rewards systems in public administration*

Rewards systems in public administration can be different across countries, because they include different combinations of elements that are described as follows, considering the dimension of legality and sub-dimensions of formality and tangibility (cf., Benati & Coccia, 2017; 2018).

Figure 2 shows, in the top section, the four elements of the *legal* rewards system in public organizations:

* Compensation is a formal and tangible element of legal rewards. This reward is extrinsic and measurable. Compensation can include basic categories: *a*). Guaranteed pay – a fixed monetary reward paid by a government institution to bureaucrats and civil servants. The most common form of guaranteed pay is the base salary. Guaranteed pay also includes cash allowances (housing allowance, transport allowance, etc.), differentials (shift differentials, holiday differentials) and premiums (overtime, etc.). *b*) Variable pay – non-fixed monetary reward paid by a government institution to civil servants – is contingent on discretion, performance, and/or results achieved; *c*). Benefits are programs that a government institution uses to supplement civil servants' compensation, such as paid time off, medical insurance, and more.

Allowance is another formal and tangible element of legal rewards in public administration. An allowance is an amount of money given or allotted at regular intervals to particular civil servants for a specific purpose. The government institution supplying the allowance may put controls in place to make sure that the money is spent for that purpose only. Allowances may be travel expenses, daily allowance (also called 'subsistence allowance'), general expenditure allowance, medical costs, end-of-term allowance, etc.

* Awards are a formal and intangible element of legal rewards. An award is something given to a person in recognition of their excellence and best performance in certain fields or positions. An award may be accompanied by trophy, title, certificate, commemorative plaque, medal, badge, pin, or ribbon. It may also simply be a public acknowledgment of excellence, without any tangible token or prize.

Seat of power in public institutions may be also a formal and intangible element of legal rewards. Seats of power are desired roles and/or official positions leading to personal recognition, such as being a secretary of state, director, to have job responsibilities of key departments, etc.

* Post-government employment and Post-career positions are informal and tangible elements of legal rewards system. In fact, the technical expertise of bureaucrats and civil servants accumulated during their career in public sector may increase their attractiveness to private sector. For instance, a retired police official can work in private investigation companies, private security companies, etc.

* Reputation is an informal and intangible element of legal rewards for civil servants and bureaucrats. Reputation (from the Latin word *reputationem*, which means 'consideration') is the general belief or opinion held by other people regarding a person's specific characteristics or abilities in certain public positions.

In addition to legal rewards system, described above, other rewards elements in public administration may be *illegal*. These elements may generate benefits in terms of private interests of bureaucrats and civil servants, their families and friends. An example is that of financial interests. Figure 2 also includes, in the bottom section, the four elements of the *illegal* rewards system in public organization. Kwon (2012) suggests that bureaucrats and civil servants are led to corruption (and as a consequence to illegal rewards) partly because their public service efforts on the job are not properly rewarded extrinsically or intrinsically.

• Gifts may be a formal and tangible element of the illegal rewards system in public organizations. An illegal 'gift' can be anything of considerable monetary

value and/or other items of high intrinsic value. A gift offered because of the employee's official position may create an appearance of using public office for private gain. The latent aim of the donor is to receive preferential treatment as a result of the gift. Common illegal gifts to bureaucrats and civil servants are: expensive watches, jewellery, new cars, leisure travels, cheap or free renovation of private houses, houses sold at low prices, etc. However, items of little intrinsic value, such as modest refreshments or greeting cards, are not considered 'illegal gifts'.

- Abuse of authority may be a formal and intangible element of the illegal rewards system. Abuse of authority is the use of legislated or otherwise authorized powers by government officials for illegitimate private gain. For criminal law, abuse of authority is an action performed by a subject who has been vested with public powers but that is opposite to the obligations imposed by law. In the form of corruption, it is the use of legislated powers for illegitimate private gain. In general, abuse of authority occurs when unsuperiors take advantage of their office and its powers against someone who is located in a situation of dependency or subordination or simply users of public services. A form of abuse of authority occurs when public officials who accede to a post or a function leverage the power granted to them by law to their own benefit (and/or simply for the sake of schadenfreude), and not to develop their public obligations properly.

- Bribes may be an informal and tangible element of the illegal rewards system for bureaucrats and civil servants. Bribery is the act of giving money or other forms of recompense to civil servants in exchange for an alteration of their behaviour (to the benefit/interest of the giver) that public servants would otherwise not alter. In short, it is a gift bestowed to influence the civil servants' conduct. Kwon (2012) argues that when performance pay is strong, the bureaucrats and civil servants use their discretion to increase their public service performance rather than to pursue corruption.

- Abuse of power may be an informal and intangible element of the illegal rewards system for bureaucrats and civil servants. Abuse of power, in the form of 'malfeasance in office' or 'official misconduct', is the commission of an unlawful act done in an official capacity, which affects the performance of official duties. In addition, abuse of power leads individuals to exert pressures through their position on someone in a situation of subordination or in need, in order to gain private benefits and/or personal satisfaction that can be financial, work-related (e.g., hiring friends and/or relatives), sexual, and/or for the sake of schadenfreude, etc. Abusing of power can be also used to cover up the deed. Some examples are nepotism, taking money from a public fund, sexual affairs, etc.

Note that, depending on circumstances and laws of countries, in the presence of illegal rewards, a bureaucrat and/or civil servant may be imprisoned, fined, demoted, or dismissed for violating ethics provisions.

4. Discussion and concluding observations

Human behaviour can be directed through the selective deployment of rewards or sanctions (Simon, 1997). Individuals will perform best when the incentive system links rewards as closely as possible to performance. This thesis is also supported by behavioural management theory that pay-for-performance enhances personal efforts and individual performance (cf., Luthans & Kreitner 1985; Lehman & Geller 2004). In contrast to the standard approach of economics, psychological studies and self-determination theory argue that there are different types of motivations -extrinsic and intrinsic motivation associated with rewards system (Frey 1997; Deci & Ryan, 1985, 2002) -and that performance of intrinsically motivated tasks is harmed by pay for performance. In particular, intrinsic rewards can satisfy personal needs directly for those who perform the tasks (Frey & Jegen 2001; George 1992). Put otherwise, intrinsic rewards seem to be important drivers of civil servants (Francois 2000; Frank & Lewis 2004; Le

Grand 2006). Moreover, studies show that performance-contingent rewards can generate different positive effects on performance of employees (Weibel *et al.*, 2009). In general, the underlying concept to reward systems in public and private organization is the motivation that is a main driver of individuals by which they achieve goals to fulfil needs and expectations. These individual needs and expectations at work can be extrinsic, intrinsic, and social. When a person's motivation is blocked before reaching a desired goal, the result is a frustration-induced behavior (Mullins, 1999).

In this context, the suggested taxonomy and theoretical framework described above can clarify the most appropriate typologies of the reward system for civil servants in public sector. However, the types of rewards applied in public organizations should be associated with appropriate theories of motivation, considering the motives that influence people's behaviour at work. Put it differently, the taxonomy here, combined with theories of motivation, provide a theoretical framework to support best practices of management to work effectively in public organization and avoid the risk of corruption and illegal rewards. The theories of motivation to design and support reward system in public sector can be content and process theory.

Content theories focus on identifying people's needs and their relative strengths, and the goals they pursue in order to satisfy the needs. This group of theories includes Maslow's hierarchy of needs model; Alderfer's modified need hierarchy model, Herzberg's two factor theory and Mc Clelland's achievement motivation theory (cf., Mullins, 1993).

Process theories, instead, focus on process of motivation, such as relationships among variables that make up motivation, and how behaviour is initiated, directed and sustained. This group includes expectancy-based models, equity theory; goal theory and attribution theory. Overall, than public managers should analyze different typologies of rewards, combined with appropriate theories of motivation, to optimize the effects of reward strategies directed to support motivation and performance of specific civil servants and particular work situation. For instance, expectancy theory is the most appropriate one for rewards strategies of knowledge workers, such as in the public sector of higher education. This theory suggests a relation between rewards, the likelihood of earning those rewards and the realization of those rewards, if performance is delivered (Mullins, 1993, p.441).

On the basis of the theoretical framework presented above, the main elements of rewards systems in public administration, represented in Figure 2, can also be systematized and generalized in a utility function (in a legal setting). This function represents a useful conceptual model for analytical studies in different environments of public organizations.

The general utility function of rewards system (UFR) is given by:

$$UFR=f_i (AL, C, PW, SP, R, PR, AW, EP,, \dots)$$

AL=allowance; C=compensation; PW=power; SP=social position; R=reputation; PR=professionalism; AW=awards, EP= expense preference, etc.

This utility function can be applied in public administration studies considering appropriate measures of variables and general observations about specific elements of rewards systems as follows. Compensation is a core tangible and measurable element of legal rewards systems to support motivation and performance of subjects in the public sector. Scholars argue that the pay-for-performance applied to compensate and motivate public officials and civil servants can produce, by itself, only minimally productive performance in public sector (cf., Benati & Coccia, 2017). In fact, the literature suggests that performance-based pay rewards are only marginally related to public service satisfaction and motivation (Judge *et al.*, 2010). In addition, pay-for-performance in public sector can produce hidden costs, such as corruption, over-justification effect or crowding-out effect and, as a consequence, it may negatively impact performance of civil servants and efficiency

of institutions (Lepper & Greene, 1978). Wright (2007, p.60) also argues that: “the intrinsic rewards provided by the nature or function of the organization may be more important to public sector employees than—or compensate for the limited availability of—performance-related extrinsic rewards”. In short, the public sector has a low dependence from *utilitarian* (monetary) incentives and it is basic to find a balance between extrinsic rewards (e.g., pay) and intrinsic rewards to improve job satisfaction and reduce corruption (cf., Crewson, 1997, p.504; Perry *et al.*, 2010; Rainey, 1982, Benati & Coccia, 2018).

Moreover, the value of a given reward is not absolute, but is relative to other rewards with which it is compared, for instance, money as reward per se does not lead to satisfaction (Greenberg & Ornstein, 1983). In fact, the crowding-out effect suggests that external incentives undermine intrinsic motivation (Frey & Jegen 2001). This crowding-out effect is one of the most important anomalies in the economics of rewards because raising economic incentives may reduce, rather than increase individual and organizational performance in the long run. Put it otherwise, intrinsic and (to a lesser extent) extrinsic rewards seem to be a predictor of job involvement, satisfaction and affective commitment, but not continuance commitment (cf., Perry *et al.*, 2010; O’Driscoll & Randall, 2011). In this context, self-determination theory argues that performing a task in anticipation of a reward, under surveillance, or within a time limit leads to a decrease in intrinsic motivation (Deci *et al.*, 1999).

Crewson (1997, pp.503-4) argues that: “Intrinsic rewards are more important to public employees than to those employed in the private sector”. Therefore, intrinsic rewards might be more important than extrinsic rewards in public organizations that seem to be driven by lower-powered incentive structures (Perry *et al.*, 2010). In addition, the subjects in public administration may also be interested in other types of intangible rewards represented by *schadenfreude*, full control, illegal gifts, bribes, etc. because of manifold factors affecting human behavior (e.g., greed, etc.).

Overall, then, this taxonomy here can be a comprehensive model to explain and generalize many elements of rewards systems in public administration. These conclusions are tentative because the domain of rewards systems in public organizations includes a variety of elements associated with different cultures, civil laws and rules of law across countries. In particular, the role and function of bureaucrats and civil servants and, as a consequence the rewards systems, can change when considering Western or Eastern countries, more or less democratic nations, etc. Moreover, the boundaries between tangible and intangible elements, and/or legal and illegal elements of rewards systems between and within countries are not always clear, such as for gifts. Hence, the taxonomy presented here is adequate in some cases but less in others, due to diversity of rewards systems across nations and organizations over time and space.

In conclusion, future efforts in this research field will be directed to refine the taxonomy and provide statistical analyses of case studies and empirical evidence to better categorize and evaluate types of rewards between public organizations over time and space. However, identifying generalizable taxonomy and theory of rewards in the fields of public administration at the intersection of economics, sociology, management, behavioural psychology and perhaps biology is a non-trivial exercise.

References

- Aberbach, J.D., Putnam, R.D., & Rockman, B.A. (1981). *Bureaucrats and Politicians in Western Democracies*, Harvard University Press.
- Andersen, L.B., & Pallesen, T. (2008). Not just for the money? How financial incentives affect the number of publications at Danish research institutions. *International Public Management Journal*, 11(1), 28-47. doi. [10.1080/10967490801887889](https://doi.org/10.1080/10967490801887889)
- Armstrong, M. (2007). *A Handbook of Employee Reward Management and Practice*, 2nd ed., Kogan Page, Philadelphia.
- Armstrong, M., & Murlis, H. (2004). *Reward Management: A Handbook of Remuneration Strategy and Practice*, 5th ed. London, Kogan Page.
- Armstrong, M., & Stephens, T. (2005). *A Handbook of Employee Reward Management and Practice*. United Kingdom: Kogan Page Limited.
- Belle, N., & Cantarelli, P. (2015). Monetary incentives, motivation, and job effort in the public sector an experimental study with Italian government executives. *Review of Public Personnel Administration*, 35(2), 99-123. doi. [10.1177/0734371X13520460](https://doi.org/10.1177/0734371X13520460)
- Bénabou, R., & Tirole, J. (2003). Intrinsic and extrinsic motivation, *The Review of Economic Studies*, 70(3), 489-520. doi. [10.1111/1467-937X.00253](https://doi.org/10.1111/1467-937X.00253)
- Benati, I., & Coccia, M. (2017). General trends and causes of high compensation of government managers in the OECD countries. *International Journal of Public Administration*. 28(4), doi. [10.1080/01900692.2017.1318399](https://doi.org/10.1080/01900692.2017.1318399)
- Benati, I., & Coccia M. (2018). Rewards in Bureaucracy and Politics. Global Encyclopedia of Public Administration, in A. Farazmand (Ed), *Public Policy, and Governance – Section Bureaucracy*, Springer. doi. [10.1007/978-3-319-31816-5_3417-1](https://doi.org/10.1007/978-3-319-31816-5_3417-1)
- Beszter, P.F. (2016). Public sector. In, A. Wilkinson & S. Johnstone (Eds), *Encyclopedia of Human Resource Management*. Edward Elgar, Cheltenham
- Bowman, J.S. (2010). The success of failure: The paradox of performance pay. *Review of Public Personnel Administration*, 30(1), 70-88. doi. [10.1177/0734371X09351824](https://doi.org/10.1177/0734371X09351824)
- Brans, M., & Peters, B.G. (2012). *Rewards for High Public Office in Europe and North America*, Routledge, London.
- Coccia, M. (2001). Satisfaction, work involvement and R&D performance. *International Journal of Human Resources Development and Management*, 1(2-3-4), 268-282. doi. [10.1504/IJHRDM.2001.001010](https://doi.org/10.1504/IJHRDM.2001.001010)
- Coccia, M. (2006). Classifications of innovations: survey and future directions. *Working Paper Ceris del Consiglio Nazionale delle Ricerche*, 8(2), 1-19. [Retrieved from].
- Coccia, M. (2006a). Analysis and classification of public research institutes. *World Review of Science, Technology and Sustainable Development*, 3(1), 1-16.
- Coccia, M. (2008). Science, funding and economic growth: analysis and science policy implications. *World Review of Science, Technology and Sustainable Development*, 5(1), 1-27. doi. [10.1504/WRSTSD.2008.01781](https://doi.org/10.1504/WRSTSD.2008.01781)
- Coccia, M. (2009a). Measuring the impact of sustainable technological innovation, *International Journal of Technology Intelligence and Planning*, 5(3), 276-288. doi. [10.1504/IJTIP.2009.026749](https://doi.org/10.1504/IJTIP.2009.026749)
- Coccia, M. (2013). What are the likely interactions among innovation, government debt, and employment? *Innovation: The European Journal of Social Science Research*, 26(4), 456-471. doi. [10.1080/13511610.2013.863704](https://doi.org/10.1080/13511610.2013.863704)
- Coccia, M. (2016). Radical innovations as drivers of breakthroughs: characteristics and properties of the management of technology leading to superior organizational performance in the discovery process of R&D labs. *Technology Analysis & Strategic Management*, 28(4), 381-395. doi. [10.1080/09537325.2015.1095287](https://doi.org/10.1080/09537325.2015.1095287)
- Coccia, M. (2016a). The relation between price setting in markets and asymmetries of systems of measurement of goods. *The Journal of Economic Asymmetries*, 14(B), 168-178. doi. [10.1016/j.jeca.2016.06.001](https://doi.org/10.1016/j.jeca.2016.06.001)
- Coccia, M. (2017). Varieties of capitalism's theory of innovation and a conceptual integration with leadership-oriented executives: the relation between typologies of executive, technological and socioeconomic performances. *Int. J. Public Sector Performance Management*, 3(2), 148-168. doi. [10.1504/IJSPM.2017.084672](https://doi.org/10.1504/IJSPM.2017.084672)
- Coccia M. 2017a. Asymmetric paths of public debts and of general government deficits across countries within and outside the European monetary unification and economic policy of debt dissolution. *The Journal of Economic Asymmetries*, 15, 17-31. doi. [10.1016/j.jeca.2016.10.003](https://doi.org/10.1016/j.jeca.2016.10.003)
- Coccia, M. (2017b). New directions in measurement of economic growth, development and under development, *Journal of Economics and Political Economy*, 4(4), 382-395.
- Coccia, M., & Bozeman, B. (2016). Allometric models to measure and analyze the evolution of international research collaboration. *Scientometrics*, 108(3), 1065-1084. doi. [10.1007/s11192-016-2027-x](https://doi.org/10.1007/s11192-016-2027-x)
- Coccia, M., & Cadario, E. (2014). Organisational (un)learning of public research labs in turbulent context. *International Journal of Innovation and Learning*, 15(2), 115-129. doi. [10.1504/IJIL.2014.059756](https://doi.org/10.1504/IJIL.2014.059756)
- Coccia, M., Falavigna, G., & Manello, A. 2015. The impact of hybrid public and market-oriented financing mechanisms on scientific portfolio and performances of public research labs: a scientometric analysis. *Scientometrics*, 102(1), 151-168. doi. [10.1007/s11192-014-1427-z](https://doi.org/10.1007/s11192-014-1427-z)

Journal of Social and Administrative Sciences

- Coccia, M., & Rolfo, S. (2007). How research policy changes can affect the organization and productivity of public research institutes, *Journal of Comparative Policy Analysis, Research and Practice*, 9(3) 215-233. doi. [10.1080/13876980701494624](https://doi.org/10.1080/13876980701494624)
- Coccia M., Rolfo S. 2008. Strategic change of public research units in their scientific activity, *Technovation*, 28(8), 485-494.
- Coccia, M., & Rolfo, S. (2009). Project management in public research organization: Strategic change in complex scenarios. *International Journal of Project Organisation and Management*, 1(3), 235–252. doi. [10.1504/IJPOM.2009.027537](https://doi.org/10.1504/IJPOM.2009.027537)
- Coccia, M., & Rolfo, S. (2010). New entrepreneurial behaviour of public research organizations: opportunities and threats of technological services supply, *International Journal of Services Technology and Management*, 13(1-2), 134-151. doi. [10.1504/IJSTM.2010.029674](https://doi.org/10.1504/IJSTM.2010.029674)
- Coccia, M., & Rolfo, S. (2013). Human resource management and organizational behavior of public research institutions, *International Journal of Public Administration*, 36(4), 256-268. doi. [10.1080/01900692.2012.756889](https://doi.org/10.1080/01900692.2012.756889)
- Crewson, P.E. (1997). Public-service motivation: building empirical evidence of incidence and effect. *Journal of Public Administration Research and Theory*, 7(4), 499-518. doi. [10.1093/oxfordjournals.jpart.a024363](https://doi.org/10.1093/oxfordjournals.jpart.a024363)
- Currall, S.C., Towler, A.J., Judge, T.A., & Kohn, L. (2005). Pay satisfaction and organizational outcomes. *Personnel Psychology*, 58, 613–640. doi. [10.1111/j.1744-6570.2005.00245.x](https://doi.org/10.1111/j.1744-6570.2005.00245.x)
- Deci, E.L., & Ryan, R.M. (1985). *Intrinsic Motivation and Self-determination in Human Behavior*. New York: Plenum.
- Deci, E.L., Koestner, R., & Ryan, R. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125(6), 627-668. doi. [10.1037/0033-2909.125.6.627](https://doi.org/10.1037/0033-2909.125.6.627)
- Deci, E.L., & Ryan, R. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. doi. [10.1207/S15327965PLI1104_01](https://doi.org/10.1207/S15327965PLI1104_01)
- Doty, D.H., & Glick, W.H. (1994). Typologies as a unique form of theory building: toward improved understanding and modelling. *Academy of Management Review*, 19(2), 230-251. doi. [10.2307/258704](https://doi.org/10.2307/258704)
- Francois, P. (2000). Public service motivation’ as an argument for government provision. *Journal of Public Economics*, 78(3), 275-299. doi. [10.1016/S0047-2727\(00\)00075-X](https://doi.org/10.1016/S0047-2727(00)00075-X)
- Frank, S.A., & Lewis, G. (2004). Government employees - Working hard or hardly working? *American Review of Public Administration*, 34(1), 36-51. doi. [10.1177/0275074003258823](https://doi.org/10.1177/0275074003258823)
- Frey, B.S. (1993). Does monitoring increase work effort? The rivalry with trust and loyalty. *Economic Inquiry*, 31(4), 663–670. doi. [10.1111/j.1465-7295.1993.tb00897.x](https://doi.org/10.1111/j.1465-7295.1993.tb00897.x)
- Frey, B.S. (1997). *Not Just for the Money: An Economic Theory of Personal Motivation*. Cheltenham, UK: Edward Elgar.
- Frey, B.S., & Jegen, R. (2001). Motivation crowding theory: A survey of empirical evidence. *Journal of Economic Surveys*, 15(5), 589–611. doi. [10.1111/1467-6419.00150](https://doi.org/10.1111/1467-6419.00150)
- Frey, B.S., & Oberholzer-Gee, F. (1997). The cost of price incentives: An empirical analysis of motivation crowding-out. *American Economic Review*, 87(4), 746–755.
- Gardner, D.G., Van Dyne, L., & Pierce, J.L. (2004). The effects of pay level on organization-based self-esteem and performance: A field study. *Journal of Occupational and Organizational Psychology*, 77(3), 307–322. doi. [10.1348/0963179041752646](https://doi.org/10.1348/0963179041752646)
- George, J.M. (1992). Extrinsic and intrinsic origins of perceived social loafing in organizations. *Academy of Management Journal*, 35(1), 191–202. doi. [10.2307/256478](https://doi.org/10.2307/256478)
- Georgellis, Y., Iossa, E., & Tabvuma, V. (2011). Crowding out intrinsic motivation in the public sector. *Journal of Public Administration Research and Theory*, 21(3), 473-493.
- Gerhart, B., & Rynes, S.L. (2003). *Compensation: Theory, Evidence, and Strategic Implications*. Thousand Oaks, CA: Sage.
- Gkorezis, P., & Panagiotis, E. (2008). Employees' psychological empowerment via intrinsic and extrinsic rewards. *Academy of Health Care Management Journal*, 4(1), 17–38.
- Grant, A.M., & Shin, J. (2012). Work motivation: Directing, energizing, and maintaining effort (and research). In R.M. Ryan (Ed.), *The Oxford Handbook of Human Motivation*. New York: Oxford University Press.
- Greenberg, J., & Wiethoff, C. (2001). Organizational justice as proaction and reaction: Implications for research and application. In R. Cropanzano (Ed.), *Justice in the Workplace: From Theory to Practice* (vol. 2, pp. 271–302). Mahwah, NJ: Erlbaum.
- Greenberg, J., & Ornstein, S. (1983). High status job title as compensation for underpayment: A test of equity theory. *Journal of Applied Psychology*, 68(2), 285–297. doi. [10.1037/0021-9010.68.2.285](https://doi.org/10.1037/0021-9010.68.2.285)
- Hartwig, R. (2004). A tiny ring of power: The department chair and golden rule management. *Journal of Public Affairs Education*, 10(1), 31–42.
- Heneman, H.G., & Judge, T.A. (2000). Incentives and motivation. In S. Rynes & B. Gerhart (Eds.), *Compensation in Organizations: Progress and Prospects* (pp. 61–103). San Francisco, CA: New Lexington Press.
- Hood, C., & Peters, B.G. (1994). *Rewards at the Top: A Comparative Study of High Public Office*, Sage, London.

Journal of Social and Administrative Sciences

- Hood, C., Peters, B.G., & Lee, G. (2002). *Reward for High Public Office: Asian and Pacific Rim States*, Routledge, London.
- Houston, D.J. (2006). "Walking the walk" of public service motivation: Public employees and charitable gifts of time, blood, and money. *Journal of Public Administration Research and Theory*, 16(1), 67–86. doi. [10.1093/jopart/mui028](https://doi.org/10.1093/jopart/mui028)
- Judge, T.A., Piccolo, R.P., Podsakoff, N.P., Shaw, J.C., & Rich, B.L. (2010). The relationship between pay and job satisfaction: A meta-analysis of the literature. *Journal of Vocational Behavior*, 77(2), 157-167. doi. [10.1016/j.jvb.2010.04.002](https://doi.org/10.1016/j.jvb.2010.04.002)
- Kernaghan, K. (2001). An honour to be coveted: pride, recognition and public service. *Canadian Public Administration*, 44(1), 67–83. doi. [10.1111/j.1754-7121.2001.tb02044.x](https://doi.org/10.1111/j.1754-7121.2001.tb02044.x)
- Kreps, D.M. (1997). Intrinsic motivation and extrinsic incentives. *American Economic Review*, 87(2), 359–364.
- Kwon, I. (2012). Motivation, discretion, and corruption. *Journal of Public Administration Research and Theory*, 24, 765–794. doi. [10.1093/jopart/mus062](https://doi.org/10.1093/jopart/mus062)
- Langbein, L. (2010). Economics, public service motivation, and pay for performance: Complements or substitutes? *International Public Management Journal*, 13(1), 9-23. doi. [10.1080/10967490903547134](https://doi.org/10.1080/10967490903547134)
- Le Grand, J. (2006). *Motivation, Agency, and Public Policy: Of Knights and Knaves, Pawns and Queens*. Oxford: Oxford Univ. Press.
- Lehman, P., & Scott Geller E. (2004). Behavior analysis and environmental protection: Accomplishments and potential for more. *Behavior and Social Issues*, 13(1), 13–32. doi. [10.5210/bsi.v13i1.33](https://doi.org/10.5210/bsi.v13i1.33)
- Lepper, M., & Greene, D. (1978). *The Hidden Costs of Reward: New Perspectives on the Psychology of Human Motivation*. Lawrence Erlbaum, Hillsdale, NJ.
- Lincoln, J., & Kalleberg, A. (1990). *Culture, Control and Commitment: A Study of Work Organization and Work Attitudes in the United States and Japan*, New York: Cambridge University Press.
- Liu B.-C., Li-Ping & Tang, T. (2011). Does the love of money moderate the relationship between public service motivation and job satisfaction? The case of Chinese professionals in the public sector, *Public Administration Review*, 71(5), 718–727. doi. [10.1111/j.1540-6210.2011.02411.x](https://doi.org/10.1111/j.1540-6210.2011.02411.x)
- Luthans, F., & Kreitmer R. (1985). *Organizational Behavior Modification and Beyond: An Operant and Social Learning Approach*. Scott Foresman, Glenview, IL.
- McKelvey, B. (1982). *Organizational Systematics: Taxonomy, Evolution and Classification*, University of California Press, Berkeley, CA.
- Milkovich, G.M., & Newman, J.M. (2004). *Compensation* (8th ed.). Burr Ridge, IL: Irwin Mc Graw-Hill.
- Mitchell, T.R. (1982). Motivation: new directions for theory, research, and practice. *The Academy of Management Review*, 7(1), 80-88. doi. [10.2307/257251](https://doi.org/10.2307/257251)
- Motowidlo, S.J. (1983). Predicting sales turnover from pay satisfaction and expectation. *Journal of Applied Psychology*, 68(3), 484- 489. doi. [10.1037/0021-9010.68.3.484](https://doi.org/10.1037/0021-9010.68.3.484)
- Mullins, L.J. (1999). *Management and Organisational Behaviour*, 5th edition, Pitman publishing, London.
- O'Driscoll, M.P., & Randall, D.M. (1999). Perceived organisational support, satisfaction with rewards, and employee job involvement and organisational commitment, *Applied Psychology: An International Review*, 48(2), 197-209. doi. [10.1111/j.1464-0597.1999.tb00058.x](https://doi.org/10.1111/j.1464-0597.1999.tb00058.x)
- O'Reilly, C., Chatman, J., & Caldwell, D. (1991). People and organizational culture: A profile comparison approach to assessing person-organization fit. *Academy of Management Journal*, 34(3), 487-516. doi. [10.2307/256404](https://doi.org/10.2307/256404)
- Perry, J.L., Hondeghem, A., & Wise, L.R. (2010). Revisiting the motivational bases of public service: twenty years of research and an agenda for the future. *Public Administration Review*, 70(5), 681–690. doi. [10.1111/j.1540-6210.2010.02196.x](https://doi.org/10.1111/j.1540-6210.2010.02196.x)
- Perry, J.L., & Porter, L.W. (1982). Factors affecting the context for motivation in public organizations. *Academy of Management Review*, 7(1), 89–98. doi. [10.1111/j.1559-1816.1996.tb00101.x](https://doi.org/10.1111/j.1559-1816.1996.tb00101.x)
- Perry, J.L., & Hondeghem, A. (2008). Editors introduction. In J.L. Perry, & A. Hogdenhem *Motivation in Public Management: The Call of Public Service*, Oxford: Oxford University Press.
- Plant, R. (1993). *A Public Service Ethic and Political Accountability*. Parliam Aff 56:560–579.
- Rainey, H.G. (1982). Reward preferences among public and private managers: in search of the service ethic. *American Review of Public Administration*, 16(4), 288–302. doi. [10.1177/027507408201600402](https://doi.org/10.1177/027507408201600402)
- Rainey, H.G., Backoff, R., & Levine, C.H. (1976). Comparing public and private organizations. *Public Administration Review*, 36(2), 233–244. doi. [10.2307/975145](https://doi.org/10.2307/975145)
- Reif, W.E. (1975). Intrinsic versus extrinsic rewards: resolving the controversy. *Human Resources Management*, 14(2), 2-9.
- Rich, P. (1992). The organizational taxonomy: Definition and design. *Academy of Management Review*, 17(4), 758-781. doi. [10.2307/258807](https://doi.org/10.2307/258807)
- Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. doi. [10.1037/0003-066X.55.1.68](https://doi.org/10.1037/0003-066X.55.1.68)

Journal of Social and Administrative Sciences

- Ryan, R.M., & Deci, E.L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54-67. doi. [10.1006/ceps.1999.1020](https://doi.org/10.1006/ceps.1999.1020)
- Schuster, J., & Zingheim, P. (1992). *The New Pay: Linking Employee and Organisational Performance*. Lexington Books, New York
- Simon, H.A. (1997). *Administrative Behavior. A Study of Decision-Making Processes in Administrative Organizations*. The Free Press, New York.
- Staw, B.M. (1976). *Intrinsic and Extrinsic Motivation*. Morristown, NJ: General Learning Press.
- Tekleab, A.G., Bartol, K.M., & Liu, W. (2005). Is it pay levels or pay raises that matter to fairness and turnover? *Journal of Organizational Behavior*, 26(8), 899-921. doi. [10.1002/job.352](https://doi.org/10.1002/job.352)
- Titmuss, R.M. (1970). *The Gift Relationship: From Human Blood to Social Policy*. London: Allen and Unwin.
- Trevor, C.O., Gerhart, B., & Boudreau, J.W. (1997). Voluntary turnover and job performance: Curvilinearity and the moderating influences of salary growth and promotions. *Journal of Applied Psychology*, 82(1), 44-61. doi. [10.1037/0021-9010.82.1.44](https://doi.org/10.1037/0021-9010.82.1.44)
- Vandenbergh, C., & Tremblay, M. (2008). The role of pay satisfaction and organizational commitment in turnover intentions: A two-sample study, *Journal of Bus Psychol.*, 22, 275-286. doi. [10.1007/s10869-008-9063-3](https://doi.org/10.1007/s10869-008-9063-3)
- Weibel, A., Rost, K., & Osterloh, M. (2010). Pay for performance in the public sector—benefits and (hidden) costs. *Journal of Public Administration Research and Theory*, 20(2), 387-412. doi. [10.1093/jopart/mup009](https://doi.org/10.1093/jopart/mup009)
- White, G. (2016). Reward management. In A. Farazmand (ed), *Global Encyclopedia of Public Administration, Public Policy, and Governance* Springer International Publishing Switzerland. doi. [10.1007/978-3-319-31816-5_2543-1](https://doi.org/10.1007/978-3-319-31816-5_2543-1)
- Wittmer, D. (1991). Serving the people or serving for pay: Reward preferences among government, hybrid sector and business managers. *Public Productivity and Management Review*, 14(4), 369-383. doi. [10.2307/3380953](https://doi.org/10.2307/3380953)
- Wright, B.E. (2007). Public service and motivation: does mission matter? *Public Administration Review*, 67(1), 54-64. doi. [10.1111/j.1540-6210.2006.00696.x](https://doi.org/10.1111/j.1540-6210.2006.00696.x)



Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by-nc/4.0>).

