

A New Typology of Monitoring and Evaluation Indicators

Dominique E. Uwizeyimana
The University of Johannesburg

Abstract

The objective of this article is to describe and explain what evaluation indicators are, what their role is in systematic evaluations, and to differentiate them according to the different classification frameworks gleaned from the current literature. Many classification systems in literature have been used to classify the different types of evaluation indicators. The fact that any classification depends on one's perspective makes it almost impossible to provide a systematic distinction between the different evaluations. The methodology used in this article is mainly based on critically analysing various secondary sources to achieve a more systematic discussion and consolidated conclusions that will help to harmonise the competing types of evaluation indicators and to suggest how they can be systematically classified. After critical analysis of literature on the different classification evaluation indicators' general types, the study concluded that the competing types of evaluation and evaluation indicators in the current literature can be systematically organised and classified into two main groups: namely (a) classification of evaluation indicators by their nature; and (b) classification of evaluation indicators by what these indicators are used to measure.

Keywords: M&E, Monitoring and Evaluation, Public policy, Indicators, evaluation indicators, performance indicators.

Introduction of Monitoring and Evaluation (M&E)

Cloete, Rabie and De Coning (2014, 11) argue that because "change and development are complex societal phenomena and are always subject to normative interpretation and assessment... the complexity of societal change and development makes accurate measurement of these phenomena difficult". To deal with the complex nature of societal changes, evaluators "must consider very closely which measuring approaches and instruments they apply to reflect, as accurately as possible, on the evaluand. Evaluation indicators make it possible to make evidence-influenced (or evidence-based) judgements about the merit or worth of the intervention concerned, instead of subjectively informed opinion-influenced judgements that might reflect one or more deliberate or subconscious biases of some sort" (Cloete *et al.*, 2014; Uwizeyimana, 2020b, 114).

Therefore, monitoring of government interventions involves "continuous and systematic collecting, analysing, and reporting of policies', programmes', and projects' performance data to support effective management (Cloete, *et. al.*, 2014, 4). It is important from the start to clarify that the concept "government interventions" will be used as a blanket term to refer to the implementation of government policies, programmes, projects, strategies, and plans. It refers to all government efforts to solve or deal with any social, economic, political, environmental, and technological issues

or problems that are affecting citizens. The Organisation for Economic Co-operation and Development (OECD) (2002, 21) defines evaluation as the “systematic and objective assessment of ongoing or completed government interventions, its design, implementation and results”. Cloete *et al.* (2014) and the OECD’s (2002) definitions of the concept of evaluation identify important lessons about what evaluation is, and the criteria it must meet to be useful to policy-makers, the government, and the citizens. The first lesson is that evaluation can be done on an “ongoing or completed” intervention. It is impossible and needless to evaluate public policies (or generally government interventions) that have not been implemented. No policy can succeed or fail if it has not been implemented. Here, the ongoing evaluation or formative evaluation or “ex-ante evaluation” includes the evaluation of the planning phase, or the design phase (OECD, 2002: 22).

The second lesson is that evaluation can focus on the implementation process for government interventions. This type of evaluation is called ongoing or process performance evaluation (Rabie & Cloete, 2009, 11). The third lesson is that evaluation can also focus on the results of the fully or partially implemented government interventions. The concept “results” is used in this article to refer to outputs, outcomes, and impacts of government interventions. The evaluation that focuses on the results is called “summative evaluation” (Cloete, 2009: 206). The different types of summative evaluation are output evaluation, outcome evaluation, and impact evaluation (McDavid & Hawthorn, 2006: 33).

The fourth lesson is that an intervention must have specific targets that are to be achieved, and specific key indicators that must be used to evaluate the extent to which they have been achieved or not achieved. These specific targets must abide by the regular interdependent constraints of policy (and programme and project) implementation. These constraints relate to the fact that government interventions must be time-bound, cost-bound (finance, budgets), quality-bound, and scope-bound. They must also be effective and efficient in dealing with the specific issues that are affecting the intended communities or society.

The fifth lesson is that for evaluation reports (the findings and recommendations) to be useful, the evaluation process must be systematic, the targets must be clearly defined, and the indicators that are used to evaluate must be “objective” (Auriacombe, 2011, 43). In addition, the evaluation process must be meticulously planned and systematically executed by evaluators who are properly qualified to conduct credible evaluations (Uwizeyimana, 2020). The sixth lesson is that to determine the focus of evaluation, the type of evaluation to be conducted, the type of evaluation indicators to be applied by the evaluators, and the design of an evaluation must be guided by some specific questions. According to Weiss (1997), the many questions that evaluation must strive to answer include (but are not limited to) the following:

- a) If the focus of the evaluation is on **the plan**: Was the plan clear about **what is** to be done, **why** it should be done, **where** it must be done, **who** must do it, and **what resources (budget, people, tools, machinery)** are needed to get the job done?
- b) If the focus is on **the process** of implementing the interventions: Was the process of converting inputs into outputs well planned? If the process was well planned, was it properly implemented? If it was well implemented, did it lead to

the achievement of the desired outputs? If the desired outputs were achieved, did they lead to the desired outcomes? Finally, how is the process that is being evaluated linked directly to the impacts of the policy interventions? Stated differently, Weiss's (1997) argument, in Auriacombe (2011, 43), is that the evaluation must determine how effectively and efficiently the resources (i.e., inputs) have been converted through various processes (activities) into concrete deliverables/results (outputs), and ultimately, short-term impacts (i.e., outcomes) and long-term impacts (i.e. long-term and sustainable consequences). While the evaluation process involves more than the above issues, the evaluation of the process also focuses on efficiency and effectiveness.

c) If the focus of the evaluation is on **the results** (output, outcomes, and impacts): What objectives did the intervention seek to achieve? What constitutes the achievement of the objectives (success or failure)? How is success or failure going to be measured? These two questions help to answer several other important questions such as: What other intended or unintended, desirable or undesirable, direct or indirect, tangible and intangible outputs, outcomes, and impacts did the intervention achieve? When the results are the focus of evaluation, three types of evaluation can be performed: namely the output evaluation, outcomes evaluation, and impact evaluation.

Further analysis of the questions about whether the focus of the evaluation is on **the plan, or on the process** of implementing the interventions, or on **the results** of policies that are being implemented (i.e., ongoing implementation) or on those that have been completed determines the types of evaluation indicators to be used by the evaluators.

The seventh lesson is that, irrespective of whether evaluation is done during the design phase (i.e. before the implementation) or during the implementation process (on an ongoing intervention, focussing on milestones or mid-term results) or on a completed intervention (i.e. focussing the results of an intervention), any evaluation is only useful if it provides "information that is credible and useful, enabling the incorporation of lessons learned into future decision-making processes of both recipients and donors" (OECD, 2002, 21). If goals have been achieved or failed to be achieved at any stage of the implementation process, then the evaluation must objectively and factually indicate how far we are from the desired goal or objectives and why or what happened. In addition, and most importantly, what can policymakers, policy implementers, and stakeholders do to remedy the negative or unintended consequences of the policy (Uwizeyimana, 2020: 5). It is often easy to assume that by setting a goal that is "specific, measurable, achievable/attainable, relevant, time-bound, and independent, we will be well on our way to accomplishing it" (Mindtools, n.d., 1). However, this is not always the case. Therefore, the eighth lesson is that to determine whether the goals of an intervention are being achieved or have been missed, these goals and the indicators that are used to evaluate the performance of the public policy (and programmes and projects) must meet certain specific criteria. For example, the objectives, targets and indicators for government interventions and the evaluation indicators must meet the SMART principles. According to the EU Integration Office (2011: 42), each of the indicators for government interventions that are being evaluated should be "specific to the objective it is supposed to measure and

must reflect an essential aspect of that objective in precise terms. This is easier said than done.

The ninth lesson, therefore, is that policy, programmes, and projects evaluation are currently in a precarious situation because too many types of evaluation and indicators for evaluation are mentioned in the literature. This makes it difficult to classify them, let alone to know which ones are appropriate for which evaluation context (Uwizeyimana, 2021: 103). According to the OECD (2010: 1), when indicators are poorly chosen, they can cause serious malfunctions. One of the many reasons evaluation indicators can be poorly chosen is because it is difficult to distinguish between the different types of policy evaluations indicators in the literature. In addition to the multitude of evaluation indicators, the classification is further complicated by the fact that many of them are reported or reproduced by the same, or different authors under different terms or concepts. The “choice and use of indicators are processes full of pitfalls” (Meadows, 1998: 4) because of the amount of literature on the topic of evaluation. According to the United Nations Evaluation Group (UNEG) (2012: 5), “the literature on M&E is vast and scholars and practitioners of evaluation sometimes have employed different concepts”. These M&E concepts often have “similar or even identical nomenclature” in literature (Mackay, 2008: 3). This can make it difficult for evaluation practitioners, teaching professionals, students, and scholars of evaluation to distinguish between them. According to Mngxaso (2015: 18), confusion and ambiguity are almost unavoidable “when one has to contend with the panoply of terms which constitute the language of evaluation”.

After some years of lecturing a module on public policy indicator development and application in a Masters’ programme at a particular university in South Africa, the author concurs with UNEG (2021), Mackay (2008), Patton (2000), and others who find it difficult to differentiate between the different types and use of evaluation indicators in the current literature. According to Patton (2000) “language matters in evaluation” in the same way it matters in any academic discipline. It is time for critical reflection and attempt to harmonise the different evaluation indicators for public policy, programmes, and project evaluation. A summary of some of the general and popular types of indicators that are found in literature is discussed below.

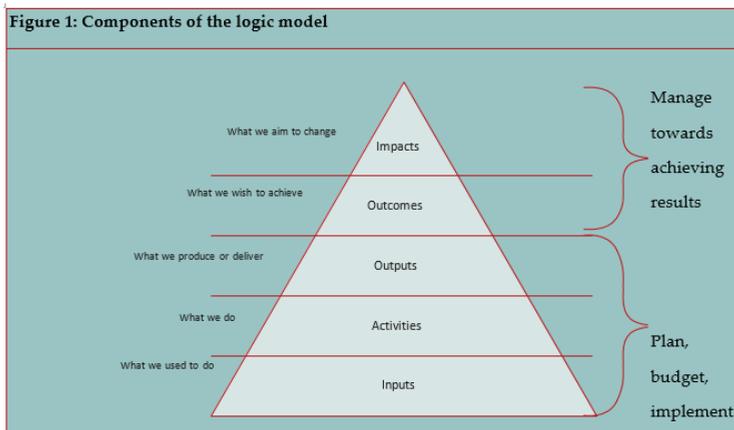
General and Popular Types of Indicators Classification Frameworks

Before discussing the different classification frameworks for evaluation indicators, it is important to explain the concept indicator. Indicators are pointers that are used to demonstrate whether the goals of government interventions are being achieved or not (Pintér, Swanson & Barr, 2004: 10). Indicators are the quantitative or qualitative yardsticks that provide simple and reliable instruments to measure achievement, to reflect the changes connected to an intervention, or to help assess the performance of an organisation against stated goals or objectives (Cloete & Wissink, 2010). Indicators are also defined as “neutral or objective, quantitative (numeric) or qualitative (non-numeric) measuring instruments (standard, norm, yardstick, and criterion), which are used to give a concrete, direct, or indirect value to an unmeasurable, or intangible concept (Cloete & Uwizeyimana, 2021: 5). A review of the literature shows that there

are at least five frameworks that have been developed to analyse and classify the different types of evaluation indicators. They include the classification of indicators based on: (1) the logframe; (2) the strategic management levels at which they are applied; (3) the evaluation perspective adopted by the evaluators; (4) based on their nature; and (5) the specific aspect of the indicators' measure.

1. Classification of evaluation indicators based on the logic model (logframe)

One of the most common classification frameworks for evaluation indicators is the logic model (or programme logic or logframe). A logic framework model is often defined as a "simplified way to conceptualise a programme" (Public Service Commission (PSC) 2008: 42). A logframe is important for the systematic classification of evaluation indicators because it summarises all the types of evaluations that can be performed at any given stage of the government intervention process (Uwizeyimana, 2020a: 8). According to the World Bank (2004: 2), "[t]he logic model helps to clarify the objectives of any project, program, or policy and the step-by-step processes that must be completed by policy implementors towards achieving these objectives". The logframe also aids in the identification of the expected causal links – the 'program logic' – in the results chain: inputs, process (actions), outputs (including coverage or 'reach' across beneficiary groups), outcomes, and impact (Uwizeyimana, 2020a: 4). A logframe also aids in the identification of performance indicators that are specific for each stage in this chain, as well as the environmental factors (i.e., risks which might impede the attainment of the objectives and opportunities that must facilitate efficient and effective achievement of these objectives) (PSC, 2008: 42). The PSC (2008) uses the logic framework (logframe) to summarise the different focuses of evaluation and the different types of evaluations that can be performed at any given stage of government intervention. Figure 1 provides the components of a logframe, which consists of the hierarchy or chain of inputs, activities (processes), outputs, outcomes, and impacts", which can be evaluated using specific types of evaluation indicators (PSC, 2008: 52).



Source: Based on PSC (2008: 52) (see also Uwzeyimana, 2020a: 4).

Based on the diagram above, the evaluation of the plan includes (but is not limited to) inputs (all the resources needed to do something), the evaluation of activities or process of implementation is about using or transforming the input (plans and budget etc.... into concrete outputs). Finally, the diagram also suggests that the evaluation of outputs focusses on what services or goods are delivered, outcomes (what the desired achievement is), and finally the impacts (what the desired changes are), commonly referred to as “managing towards achieving results”.

Table 1 below represents the different focus areas of evaluation, the different types of evaluation linked to the the evaluation forcus and the different types of evaluation indicators associated with the different types and focus of evaluation that are in line with the concept “logframe”.

Table 1: Types of evaluation and the indicators that are used at various levels of the logframe

Type of evaluation	Type of indicators	Logframe indicators’ descriptors
I n p u t evaluation	I n p u t indicators	<p>According to Rabie (2011: 134), “input indicators measure the quantity (and quality) of the resources (financial, physical, human, machinery, information, time, etc.) that are fed into a project”. Input indicators also measure the non-tangible but vital indicators, such as political input, community support, and the quality of plans, that will guide the implementation process (Rabie, 2014: 209). Input indicators help to specify “what” is required before the outputs and outcomes depicted in the programme, the theory of chage (ToC) can realistically be achieved (Rabie, 2014: 209). Four types of input indicators highlighted in these definitions are:</p> <ul style="list-style-type: none"> • input quantity indicators; • input quality indicators; • tangible input indicators; and • non-tangible input indicators.
P r o c e s s evaluation	P r o c e s s indicators	<p>Process indicators “focus on ‘how’ an intervention (project, programme, policy) achieved its goals” (Chen, 2005: 10). Thus, process indicators “track the process through which the inputs have been converted into programme outputs and outcomes”. These types of indicators help to reflect on “efficiency, productivity, compliance to good governance principles, and normative considerations of the conversion process” (Rabie, 2014: 209). Rabie (2014: 209) argues that the “implementation process can be evaluated qualitatively (with a description of the programme activities and perception) or quantitatively (through client satisfaction and perception surveys)”. This definition highlights that process indicators could include:</p> <ul style="list-style-type: none"> • efficiency indicators; • productivity indicators; • compliance (to good governance principles) indicators; • normative considerations of the conversion process (for example, are the people involved in the input conversion process treated humanely, paid fairly, and wearing appropriate protective gear if the conversion environment is toxic, etc.); • qualitative indicators; and • quantitative indicators.

Type of evaluation	Type of indicators	Logframe indicators' descriptors
O u t p u t evaluation/ P r o d u c t evaluation	O u t p u t indicators	<p>Output indicators “measure the quantity and quality of the goods and services created or provided through the transformation or use of inputs” (Rabie, 2014: 209). Outputs are generally objective, direct, and tangible products or services, which are the direct results of a specific process and project. Based on this definition, the focus of output indicators is on:</p> <ul style="list-style-type: none"> • quantity indicators; • quality indicators; • objective indicators; • direct indicators (as opposed to indirect indicators); and • tangible indicators (as opposed to intangible indicators). <p>These indicators mean that people must be able to either see, feel, hear, touch, or smell the product or service generated through the processing of input. People must thus be able to experience the output through one or more of the human senses. This explains why output evaluation is also called product evaluation. “Product evaluation in general terms, identifies and assesses outcomes, intended and unintended, short-term and long-term to help staff keep an enterprise focused on achieving agreed-on, important outcomes and ultimately to help relevant users gauge the success of the effort in meeting targeted needs. In a different sense, product evaluation refers to the evaluation of tangible products, such as computers, automobiles, and cameras. In all product evaluations it is important to identify and validate criteria of merit, weight their relative importance, assess the product on each criterion, and, where possible, reach an overall conclusion” (Stufflebeam & Shinkfield, 2007: 16).</p>
O u t c o m e evaluation	O u t c o m e indicators	<p>Outcome indicators include the objective short-term change of the policy, programmes, and projects concerned and the subjective reaction (or perception) of the target beneficiaries (Rabie, 2014: 210). Outcome indicators refer to the measurement of “direct consequences or results of an activity or process”. The types of indicators linked to outcomes include:</p> <ul style="list-style-type: none"> • objective short-term change indicators; • subjective reaction (or beneficiaries’ perception) indicators; and • direct indicators (i.e., indicators for “direct consequences or result” which are directly linked [or attributed] to the activity, process, or output [i.e., direct indicators]).

Type of evaluation	Type of indicators	Logframe indicators' descriptors
Impact evaluation	Impact indicators	<p>An impact evaluation assesses the programme based on the long-term changes it makes and whether it achieves the set long-term goals. Outcome and impact are, in most cases, confused as having the same meaning; however, outcome focuses on the short-term outcomes, whereas impact focuses on the long-term changes. An impact evaluation is a more comprehensive assessment, which examines the holistic changes that a programme has brought (McDavid & Hawthorn, 2006: 33).</p> <p>Impact indicators are used to evaluate “the longer term, broader societal implications and development outcomes of an intervention, not necessarily limited to the direct beneficiaries of the programme” (Rabie, 2014: 210). Impact indicators could consider “demographic, geographic, environmental, social, organisational, technological, financial and economic” impact (Rabie, 2014: 210). Some difficulties in measuring impact indicators include the “time lag” because impact indicators usually measure the impact that takes place a long time after the programme and projects have been completed. It is difficult to attribute success or failure to a particular programme because of “time lags” and because the impact is seldom the result of a single programme or single institution. For example, the success of an education programme (i.e. the increase in the pass rate) is a result of the availability of school infrastructures, which are the responsibility of the Department of Infrastructure; the availability of running water and sanitation, which are the responsibility of the Water and Sanitation Ministry; the availability of security, which is the function of the Ministry of Safety and Security; etc. Indicators that can be gleaned from this definition include:</p> <ul style="list-style-type: none"> • longer-term, broader societal implications indicators; • development outcomes indicators; • direct (and indirect) impact indicators (linked to beneficiaries of the programme); • demographic impact indicators; • geographic impact indicators; • environmental impact indicators; • social impact indicators; • organisational impact indicators; • technological impact indicators; • financial impact indicators; • economic impact indicators; • objective (and subjective) impact indicators (hence it is difficult to attribute the success or failure to a particular programme because of “lag times); and • complex (and simple) impact indicators (because the impact is seldom the result of a single programme or single institution).
Results evaluation	Result indicators	<p>Result indicators “measure the consequences of activities about objectives at project or programme level” (Rabie, 2014: 210). The OECD (2010: 34) defines results as changes in a state or condition that derive from a cause-and-effect relationship. There are three types of changes that can be set in motion by an intervention, namely output, outcome, and impact.</p>

Source: Adapted from PSC (2008: 42).

Based on the above table, it can be argued that the indicators in the logframe are intended to measure every part of the logframe. The resulting ranking or classification of evaluation indicators, and what these indicators are intended to measure at the different levels of the logframe, are presented in Table 1. While research has shown that change and complexity in the environment reduce the validity of the logframe as an evaluation tool, it contains some useful information that can be used by evaluators to determine the success or failure of interventions (Uwizeyimana, 2018b). A similar, but more expanded classification was provided by Cloete and De Coning (2011: 208) in the form of classification of evaluation indicators based on where they are applied at the organisations' management levels.

2. Classification of evaluation indicators based on where they are applied at the organisational management level

Cloete and De Coning (2011: 208) link evaluation indicators to the strategic management levels at which they are used. The literature suggests that management takes place at three levels of the organisation, namely strategic management, which takes place at the top level of the organisation; tactical management, which is conducted by middle managers; and operational management, which is conducted by lower-level managers. The vision and mission of the organisation are the responsibility of top management at the strategic management level; the breakdown of strategies into specific programmes that will be implemented to achieve the mission and vision of the organisation is the responsibility of tactical middle managers; and the responsibility to break the different programmes down into specific projects and day-to-day operations to implement programmes is the responsibility of lower-level operational managers. Strategic, tactical, and operational decisions differ in terms of their impact, the period they cover (strategic decisions are over five years, tactical decisions cover between two to five years, and operational decisions cover anything below one year) (Nickols, 2005).

The classification of evaluation indicators according to the management level at which they are applied, gives credence to Cloete's (2009: 296) statement that M&E are higher-order management processes that are generally undertaken to determine whether policies, programmes, and projects have been achieved or not. As Cloete (2009: 309) puts it, M&E are "higher-order management functions" in an organisation in the sense that they form "a normal part of mainstream management processes in that organisation". The fact that government interventions (policies) are implemented through several programmes, and programmes are implemented through several projects, which are themselves implemented through a multitude of daily operations, suggests that evaluation decisions and processes are also stretched along that chain of processes (Turner, 1993).

However, there is no doubt that Cloete's (2009) analysis suggests that evaluation must consider the different inputs, activities, outputs, outcomes, and impacts at the different levels at which decisions and actions have been taken, as well as the time-span these decisions cover. The vision, mission, programme (and the projects), the activities (or processes), problems, and resources, which are the inputs and the assumptions of the policy, programmes, and projects that are being implemented and evaluated, require having proper targets and indicators (Uwizeyimana, 2018b). Table 2 below lists the different indicators that can be used to evaluate the different levels of strategic (or higher-order) management levels and those that can be used to evaluate middle and lower management levels.

Table 2: M&E as a higher-order management system

Strategic planning level	Policy-planning focus	Programme level	Evaluation focus	Evaluation indicator area	Timeframe	Type/nature of indicators
Vision	Policy (what to do?)	Intangible impact/outcomes.	Final multi-sectoral/integrated goals/consequences.	Empowerment, growth, equity, redistribution, democracy, stability, sustainability, etc.	Long-term.	Tangible and intangible indicators. Longer lifespan. The overarching impact is measured.
Mission	Strategies (how to do it?)	Intangible outcomes BUT concrete progress.	Intermediate sector-specific results/goal achievement.	Improved education, health, economy, community, politics, culture, environment, etc.	Medium-term.	Tangible and intangible indicators. Longer lifespan. The overarching impact is measured.
Programme/project	Operational plan (what deliverables?)	Concrete outputs: Deliverable/product/milestones.	Quantity, quality, diversity.	More and better range of houses, pass rate, clinics, roads, technology, harvests, jobs, electricity.	Short- to medium-term.	Tangible and intangible indicators. Long lifespan. The large impact is measured.
Activities	Process plan (what, who, when, and how?)	Resources conversion processes.	Relevant, appropriate levels of work.	Efficiency, effectiveness, productivity, scheduling, participation, timeliness, costs, benefits.	Short- to medium-term.	Tangible indicators. Short lifespan. The overarching impact is measured.

Problems and resources	Required resources to deal with the problem (with what?)	Inputs: Concrete ingredients to address the problem.	Optimal use of resources.	Availability, feasibility, risk, adequacy of funds, people, supplies, time, priorities, information.	Short- to medium-term.	Tangible indicators.
-------------------------------	--	--	---------------------------	--	------------------------	----------------------

Source: Adapted from Cloete and De Coning (2011: 208)

3. Classification of evaluation indicators based on the evaluator’s perspective

The PSC (2008) also proposes that evaluation indicators can be classified based on the evaluator’s perspective. The principle here is that an evaluator should identify the perspective they are adopting before starting the evaluation. According to the PSC (2008: 21), “evaluation perspectives point to the main focuses of an evaluation”. Thus, the selected evaluation indicators must be appropriate for the evaluation perspective adopted by the evaluators. Having a clearly defined perspective before conducting an evaluation is important for any type of evaluation, but it is more important when one is evaluating large, multi-sectoral and multi-level programmes and projects. The PSC (2008: 18) argues that “when complex, multi-dimensional subjects are evaluated, the outcome will depend largely on the perspective adopted by the evaluators, the dimensions of the complex reality that are emphasised by the evaluators, or the questions they are asking.

Therefore, by looking at the evaluation reports and recommendations, one can identify which of the perspectives have been emphasised by the evaluators” (PSC, 2008: 18). The following list of evaluation perspectives presented by the PSC (2008) is by no means an exhaustive one, but it indicates some evaluation perspectives that can be employed by the evaluators (PSC, 2008: 19):

- The Balanced Scorecard of the Kaplan and Norton perspective.
- Programme performance perspective.
- Financial perspective.
- Governance perspective.
- Human Resource Management [HRM] perspective.
- Ethics perspective.
- The National Treasury Guidelines perspective.

Table 3 summarises the evaluation perspectives and their associated indicators.

Table 3: Evaluation perspectives and their associated indicators

Perspectives	Type of indicators required
Financial perspective	Indicators that measure finances and the economy.
Programme performance perspective	Indicators that measure efficiency and effectiveness.
Ethics perspective	According to PSC (2008:22-23), ethics perspective includes the following: <ul style="list-style-type: none"> • anti-corruption strategies and fraud-prevention plans; ▪ risk assessment; ▪ activities to promote the Code of Conduct; ▪ minimum anti-corruption capacity; ▪ investigation procedures and protocols; ▪ effective reporting lines (whistleblowing); ▪ inter-agency cooperation; ▪ management of conflicts of interest; ▪ dealing with financial misconduct; ▪ assignment of responsibility for the ethics function in the organisation; ▪ pre-employment screening; and ▪ Ethics training (PSC, 2008:22-23).
Governance perspective	Application of Human Rights and governance principles
HRM perspective	Labour relation objectives as a guide for indicators.
The Balanced Scorecard of Kaplan and Norton	The Balanced Scorecard of Kaplan and Norton uses composite indicators based on the following: <ul style="list-style-type: none"> ▪ financial indicators (efficiency, economy, etc.); ▪ public or stakeholder participation indicators; ▪ customer satisfaction indicators; ▪ sustainability indicators; ▪ process indicators; and ▪ Competency indicators.

Source: Adapted from PSC (2008: 22-23).

The following discussion focuses on the classification of evaluation indicators by nature and by what they measure.

4. Classification of evaluation indicators based on their nature

A critical analysis of the literature shows that the first typology of evaluation indicators' classification is based on the nature of the indicators. According to the OECD (2010: 1), "indicators are natural, everywhere, part of everyone's life. Indicators arise from values, and they create values". The concept "nature", as used here, denotes "the typical qualities or character, type, and kind" (Oxford Paperback Dictionary & Thesaurus, 2009: 613) of the indicators that are used to conduct the evaluation. It is important to consider the nature of the indicators to ensure that the data they generate enhances the validity of measurement and to ensure a balanced

perspective of the evaluation (Rabie, 2014: 212). The classification of the different indicators according to their nature produced the ten types of evaluation indicators which are listed in Table 3.

4.1 Quantitative indicators versus qualitative indicators

The first classification of evaluation indicators based on their nature is whether they are qualitative or quantitative. There is a robust debate in the literature about whether evaluation should use qualitative or quantitative indicators to produce credible and valid results. For example, Mathison (2005:199) emphasises that evaluation must be based on empirically observable and measurable aspects of the evaluand for it to be credible. Quantitative indicators use numerical data such as numbers, percentages, and ratios to answer questions relating to “what”, “how much”, or “how many” (Rabie, 2011: 213). Kusek and Rist (2004: 56) do not discount the importance of qualitative indicators but argue that sometimes the aspects of the evaluand (or target or entity being evaluated) cannot be empirically observed or quantified. Evaluators must rely on qualitative indicators when the aspects of the evaluand are not observable or quantifiable. Even when the aspects of the evaluand are quantifiable, it is always advisable to complement quantitative evaluation with qualitative evaluation to produce a balanced and comprehensive evaluation.

Thus, qualitative indicators are as important as quantitative indicators in evaluation. Qualitative data include virtually any information that cannot be quantified and is not numerical. Qualitative data are based on the narrative descriptions, attitudes, feelings, and lived experiences of respondents about something and such experiences are often expressed as good/bad or happy/unhappy, or categories such as true/false, or yes/no, or as rankings such as low, medium, or high (Rabie & Cloete, 2012: 205; Atkinson & Wellman, 2003: 11-12). The recognition that it is difficult or impossible to measure or quantify all indicators of a successful or failed intervention (such as happiness, satisfaction, unhappiness, dissatisfaction, etc.) led Rabie and Cloete (2012: 204, citing Miles, 1989: 16; Mathison, 2005: 199; and Kusek & Rist, 2004: 65) to recognise that “indicators are measuring instruments that are used to give a concrete, measurable” information but are also sometimes used to measure “indirect value to an otherwise immeasurable, intangible concept”. Miles (1989: 17) also held this view, and argued that “indicators”, especially “social indicators for human development” are both “internal (i.e., subjective perceptions) and external (i.e., more objective measurements)”. Both Miles’ (1989) and Kusek and Rist’s (2004) arguments are further confirmations of an earlier argument presented by Carley (1981: 89), that “policy indicators are useful tools in the evaluation process” but that they “should be used with caution to avoid criticism related to possible normative bias or *quantificationism*”. *Quantificationism* is a composite concept of the word “quantification” (from the verb “to quantify”, which means to express things in terms of quantity) and the suffix “-ism” (i.e., any distinctive doctrine or practice, or ideology), thus *quantificationism* is a false belief that everything can be expressed in numbers (Rabie & Cloete, 2012: 204). Not everything tangible can be expressed in numbers.

Finally, attempting to quantify qualitative data, such as asking people to rate their feelings (happiness or unhappiness, satisfaction or dissatisfaction) on a scale, is not necessarily empirical science. For example, what is the difference between the person who says he/she is happy or satisfied with government performance and the one who says he/she is a little happy or very happy? They both express a desirable positive feeling of happiness to the outcome or impact of the intervention (i.e., no one is unhappy).

4.1.2 Tangible versus intangible indicators

Kusek and Rist (2004) introduced new performance evaluation indicators, namely tangible and intangible indicators. There is, however, a direct relationship between qualitative and quantitative indicators, as discussed above. For example, tangible indicators also produce quantitative data that are numerical or quantifiable, while intangible indicators also produce data that are generally qualitative (not tangible). In addition, the target of an evaluation can produce both tangible (quantitative) and intangible (qualitative) data at the same time.

4.1.3 Objective indicators versus subjective indicators

Objective measurement is based on explicit criteria and is performed by external observers (Veenhoven, 2007: 214). "Subjective indicators have been proven to possess predictive power for a large array of social and economic outcomes" (Rammstedt, 2009: 4). Indicators measure subjective opinions when data that were collected are qualitative, and measure objective and verifiable facts when the data are quantitative. Rammstedt (2009: 4) states that "the most prominent criterion for a subjective indicator is the satisfaction or subjective wellbeing, worry or trust, such as trust in the government, in the democracy, or general trust in others". Rammstedt (2009: 4) argues that "[t]his can be either operationalized as satisfaction with life in general or as satisfaction with specific aspects of one's life, such as work, marriage or living conditions". Thus, qualitative questions can be answered objectively if the indicators are framed to elicit objective responses.

4.1.4 Static versus dynamic indicators

Indicators can be static or dynamic. Static indicators provide the actual measurement at a specific point in time. For example, what was the level of crime in your neighbourhood in June? What was the value of the South African rand (ZAR) to the United States dollar (USD) last Wednesday at 10:15? How tall were you and what was your weight when you were ten years old? The answer to these questions could be a simple figure or statistics, such as 20 incidents of housebreaking in June and ZAR15 per USD1 last Wednesday at 10:15, and one metre tall and 18 kg. The data are static in the sense that they describe an incident in the way it happened at a particular time. This is different from dynamic indicators, which measure the degree or level of change in a particular indicator over some time. For example, the level of crime (e.g.,

housebreaking incidences per month) in your neighbourhood in the last six months will fluctuate between up, down, and stable over six months. The value of the ZAR to the USD will fluctuate over an hour, day, month, six-month period, etc. The analysis seems to suggest that both static indicators and dynamic indicators are generally quantitative.

4.1.5 Simple/single versus composite (complex) indicators

Indicators can be simple or complex. A simple indicator measures a “single element of performance” such as passing a test or failing it (Pereira & Othman, 2010: 1). For example, to determine whether a student has passed a test or exam, one checks whether the student has achieved 50% and above of the total marks. The student has failed if he/she has achieved less than 50%. Complex indicators measure a basket of performance and combine scores from multiple indicators (Cloete, *et. al*, 2014: 214). For example, to evaluate whether a country has achieved good governance, the World Governance Index (WGI) is used. The WGI utilises composite indicators such as peace and security, rule of law, human rights and public participation, sustainable development, and human development (Van der Waladt, 2012: 87). Measuring the goodness of governance is inherently complex because it requires the evaluator to compare several issues, such as culture, political ideology, norms, ethics, values, and standards in that country with other countries (Van der Waladt, 2012: 87).

For example, one cannot claim to have good governance if the citizens of the country have no peace and security; if there is no rule of law (or the law is applied unfairly or discriminately); if human rights are violated; if there is no public participation; if there is no development or if the development that is taking place is not sustainable; and if the economy is not growing or is growing by benefitting only a few at the expense of the majority (Pereira & Othman, 2010: 1). The Human Development Index (HDI) is another example of a composite indicator. The HDI measures multiple indicators such as social development, economic development (e.g., health, education, and income.), and technological development indicators into one single rating (Rabie & Cloete, 2012: 205). Simple indicators measure one identifiable element, while complex indicators consider many elements (factors) of the same factor at the same time (Rabie, 2011: 213).

4.1.6 Comprehensive indicators versus performance indicators

Performance indicators adopt an internal administrative perspective by measuring inputs and outcomes controlled by government agencies. This is like performance contracts that employees sign at the beginning of the year. Evaluation of an employee’s performance at the end of the year (or another agreed-upon period) focuses on checking whether the employee has achieved (or failed to achieve) what is mentioned in the performance contract. In contrast, comprehensive indicators adopt a larger scope by considering environmental aspects such as economic, societal, organisational, as well as personal aspects and circumstances that could have enhanced or hampered the achievement of the agreed targets (objectives). Therefore,

Rabie (2014: 214) argues that comprehensive indicators measure aspects of quality of life and look at sustainability and sustainable development that are not always included in the evaluation.

4.1.7 Data-driven indicators versus theory-driven indicators

The data-driven approach uses both baseline data and current (or culmination) data to populate the indicators table (Rabie, 2014: 21). Data-driven indicators are the oldest form of evaluation and are less complicated than theory-driven indicators. According to De Silva, Breuer, Lee, Asher, Chowdhary, Lund & Patel (2014: 2), the basic tenet of scholars who contributed to the development of the theory-driven approach was that “understanding the theory underlying a program approach is necessary to understand whether, and how, it works” and why it has worked the way it did. As the name indicates, “theory-driven indicators are based on the theory of change (ToC)” (Rabie, 2011: 132). There seems to be a consensus among scholars such as Weiss (1997: 65) and De Silva *et al.* (2014: 2) that “ToC is a theory of how and why an initiative works, which can be empirically tested by measuring indicators for every expected step on the hypothesised causal pathway to impact”.

According to De Silva *et al.* (2014, p. 2), the theory-driven approach “is developed in collaboration with stakeholders and is modified throughout the intervention development and evaluation process through an ongoing process of reflection to the exploration of change and how it happens”. Once developed, “[i]t is visually represented in a ToC map, which is a graphic representation of the causal pathways through which an intervention is expected to achieve its impact within the constraints of the setting in which it is implemented” (De Silva *et al.*, 2014: 257). Rabie (2011: 132) argues that the “theory-driven approach focuses on identifying the best possible indicators based on the programme logic, regardless of the availability of data at the start of an intervention”. Theory-driven indicators are therefore useful, “especially when baseline data on the situation that necessitated the intervention are not available” (Rabie, 2014: 214).

4.1.8 Self-developed indicators versus pre-designed indicators

Self-developed indicators are adopted with a bottom-up approach to provide feedback on the specific performance information needs of the policy, programme, and project decision-makers (Rabie, 2014: 214). That is, self-developed indicators are evaluation-specific (or target-specific) indicators that are developed during the implementation process (as one adjusts or makes changes to the implementation plan, one creates an indicator to evaluate the impact of that additional change). For example, changing the scope of the project after its implementation has started will automatically lead to the change of evaluation indicators. A major event (such as accidental disappearance of the budget, the mass resignation of employees, and employees going on strike for a long time) has a major bearing on the cost, time, and quality of a project and they are not easy to anticipate before the implementation process starts (Ile, Eresia-Eke & Allen-Ile, 2012). When they do happen, their effect must be considered and

evaluation indicators to measure their impact must be developed. On the contrary, pre-designed indicators are selected from existing indicators (i.e., indicators that have previously been used elsewhere by other researchers). Pre-designed indicators help evaluators learn from lessons that have been learned elsewhere and to speed up the development of reliable indicators (Rabie, 2014: 214).

4.1.9 Direct indicators versus indirect (or proxy) indicators

Direct indicators are those that are used to directly assess the performance of an evaluation (Rabie, 2014: 205). For example, as Rabie (2014: 205) explains, “if we wish to assess the performance of a housing project or programme at output level (phase), we may adopt an indicator that measures ‘the number of houses constructed’” at that specific time of evaluation. This indicator is reliable because it measures the performance aspect (i.e., the number of houses that have been constructed) of interest at the time the evaluation is conducted. This indicator is also reliable because the number of houses that have been constructed can be verified through observation and counting. The result of these direct indicators requires little or no further interpretation. For example, if the objective of the housing programme was to build 1 000 houses in six months at the cost of USD 10 000 000 (i.e., USD 100 000 per housing unit) and the counting of completed houses at the end of six months finds that only 800 have been completed, there is no confusion that 200 houses have not yet been built. A different person using the same indicator would still arrive at the same conclusion. However, when direct indicators are unavailable or difficult to obtain due to costs, complexity, or time constraints, proxy (indirect) indicators may provide a more indirect indication of potential problems or success of the intervention (Rabie & Cloete, 2012: 205). For example, if one asks you about the quality of your life, you do not immediately think of anything else except whether you are sickly or have a chronic disease. But it is a well-known fact that the quality of one’s life can be indirectly measured by objective indicators such as education level, income levels, access to shelter, access to sufficient food, access to basic services such as potable water and electricity, and access to a clean environment, (Rabie, 2011: 213) because anyone who lacks access to these things is most likely living a poor-quality life.

4.1.10 Observable or verifiable change indicators

Rabie (2014: 206) defines observable or verifiable change indicators as those indicators that provide qualitative observation or verification that change has occurred because of the evaluation. For example, as Rabie (2014: 206) explains, “one may observe the change from prior conditions after implementing programmes that clean up refuses from vacant land or town streets, which can be observed, and indirectly quantified”.

4.1.11 Associated measures indicators

Rabie (2014: 206) defines associated measures (also called proxy indicators) as indicators that measure a variable associated with an otherwise immeasurable,

intangible concept. For example, the quality of a constructed house refers to an intangible concept that cannot be measured directly or quantified. However, “there is a direct relationship between the quality of the housing structure and the adherence to approved building standards”, such as having a qualified builder, using the right quantity and quality of building material, and abiding by specific building principles and regulations. Thus, adherence to building standards can be used to explain why a housing structure is of good quality or not. The assumption here is that the quality of the house could have been negatively affected if the building standards were weak or incorrect or were incorrectly applied or ignored by the builders. A summary of the major classification of evaluation indicators is provided in Table 4.

Table 4: Major classification of evaluation indicators based on their nature

1. Quantitative indicators vs. qualitative indicators	2. Tangible vs. intangible indicators	3. Objective indicators vs. subjective indicators	4. Static vs. dynamic indicators	5. Simple/single vs. composite (complex) indicators
6. Comprehensive indicators vs. performance indicators	7. Data-driven indicators vs. theory-driven indicators	8. Self-developed indicators vs. pre-designed indicators	9. Direct indicators vs. indirect (or proxy) indicators	10. Observable or verifiable change indicators
11. Associated measures indicators				

Source: Created by the author

5. Classification of evaluation indicators based on what they measure

Mosse and Sontheimer (1996:), Rabie and Cloete (2012: 207), and Frenehard (2015: 1) are some of the authors who have classified the different evaluation indicators according to what they measure. Classification of evaluation indicators based on their purpose is a descriptive form of classification. That is, it provides descriptions of facts about the indicators and what they are used to evaluate (Rabie, 2014: 215). The classification focuses on “what is measured” (Rabie, 2014: 207). The following are some of the types of evaluation indicators that can be used at different stages of an intervention, and which focus on different dimensions of performance (see Table 5).

Table 5: Classification of evaluation indicators based on what they measure

What is measured	Type of indicators	Description of what they measure
Input	Input indicators	They measure the financial, physical, human, information, and time resources that are fed into a project. Input indicators measure the quantity and sometimes the quality of resources provided for project activities (Rabie & Cloete, 2012: 207-210). According to Mosse and Sontheimer (1996: 11), depending on the project, these can include: <ul style="list-style-type: none"> • funding - counterpart funds, bank loan funds, co-financing, and grants/ guarantees; • human resources - number of person-years for members of the implementation unit, consultants, and technical advisors; • training; and • equipment, materials, and supplies, or recurrent costs of these items; for example, textbooks, syringes, vaccines, and classroom facilities.
Process/ activities	Process indicators	Process indicators focus on how a programme achieves its goals (Chen, 2005: 10). It is very important to have the goals of a policy and programme defined and described in the clearest and most specific ways. Process indicators entail an evaluation of the way resources (inputs) are systemically converted into policy outputs and outcomes in terms of efficiency and compliance with good governance principles and normative considerations (Rabie & Cloete, 2012: 207-210).
Output	Output indicators	These indicators measure the product or direct results of a specific process and project. Output indicators measure the quantity and sometimes the quality of goods or services created or provided through the processing of inputs. The inputs must be used or processed to create or produce the outputs (Rabie & Cloete, 2012: 207).
Outcomes	Outcome indicators	Outcomes are the consequences (both positive and negative) and results of intervention (policies, programmes, and projects). Outcome indicators refer to the direct consequences or results of an activity, project, or process, or the objective short-term changes that can be reasonably and objectively attributed to the intervention concerned. Short-term changes can also be subjective reactions of the clients and beneficiaries of interventions. Beneficiaries react differently to projects. Their reactions depend on how they think the intervention has met or fulfilled their needs or expectations. Some impacts are direct, while others are indirect; some are intended, while others are unintended; some are positive, while others are negative; and a combination (such as intended-positive, unintended-positive, and unintended-negative) is also possible. <p>It is often argued that “outcome indicators measure the quantity and quality of the results achieved through the provision of the project goods and services” (Mosse & Sontheimer, 1996: 12). However, this argument is incomplete because the implementation of an intervention (project, programme, and policy) can achieve results (positive or negative) that are not intended by the implementers.</p>
Impact	Impact indicators	Impact indicators “reflect the long-term, broader societal implications of an intervention and the realisation by governments that not only short-to-medium-term policy outputs should be measured, but also developmental outcomes that are sustainable over the long-term” (Rabie & Cloete, 2012: 210). Rabie and Cloete (2012: 207-210) distinguish between “demographic, geographic, environmental, social, organisational, technological, financial, and economic impact indicators”.
Economy	Economic indicators	The economy is “procuring inputs at the best price and using it without wastage” (PSC, 2008: 29). This type of indicator measures whether policy implementers can negotiate and obtain the best prices for the inputs (all types of resources) without compromising the quality and producing the maximum possible number of outputs from inputs without wastage. It also begs the question: Was the price paid for the input reasonable (i.e., not inflated) at the time of purchasing them? (Uwizeyimana, 2015: 72). According to Ille <i>et al.</i> (2012: 11), “these are concerned with the cost and timing of the acquisition of resources and the execution of activities”.
Efficiency	Efficiency indicators	Efficiency is “the relationship between inputs and outputs, that is, to deliver more output for the same amount of input or the same output for a decreased amount of input” (PSC, 2008: 29).

Effectiveness	Effectiveness indicators	<p>A few researchers and analysts agree that policy implementation effectiveness is concerned with the degree of success in achieving the hoped-for policy objectives/outcome (Ismail, Bayat & Meyer, 1997, p. 8 cited in Uwizeyimana, 2012: 72). It is about the level at which the intended results have been achieved. Effectiveness is about achieving the intervention's (policy, programme, and project) objectives/purposes (Uwizeyimana, 2015: 71-72).</p> <p>According to Ghenna (2006: 1-2), in terms of policy, programme, and project implementation, effectiveness indicators measure the levels at which policies have managed to change the behaviour of target groups. To simplify matters for this research, "the effectiveness of policy implementation, also interpreted as the success of the policy implementation, is determined by the size of 'the gap' between the current recorded achieved result and the desired (registered, wished for, or expected) behaviour/objectives" (Uwizeyimana, 2012: 72). This means that the smaller the gap between the achieved objectives and the desired/expected objectives, the more effective or successful the policy implementation can be said to be. The bigger this distance is, the more ineffective the policy implementation can be said to have been or can be said to have failed.</p> <p>As Ghenna (2006 cited in Uwizeyimana, 2012: 72) puts it, the level at which policy implementation has managed to change the behaviour of target groups is a critical factor in determining the effectiveness of policy implementation. For this research, therefore, policy implementation goes beyond mere budget allocation to the actual completion of the job (Uwizeyimana, 2012: 72). This means providing goods and services of the appropriate quality and quantity to the target beneficiaries at the right time to address the problem that led to the policymaking and budget allocation, and to meet or exceed the policy objectives as set out in the policy document (Uwizeyimana, 2012: 72). The PSC (2008: 30) defines effectiveness as "how well the output and outcome objectives of the department or programme are achieved and how well the outputs produce the desired outcomes". "Effectiveness also has to do with alternative strategies to produce the same outcome – that is, which of the available alternative strategies will work best and cost less" (PSC, 2008: 30).</p> <p>Two types of effective measurements can be identified:</p> <p>Interim effectiveness measures the difference between baseline data (status before the intervention) and the current performance (interim results which could be obtained any time during the implementation). When there is substantial progress in terms of implementation but less or no reduction of the problems is being realised, corrective measures (which might include termination of the project) must be taken.</p> <p>Final effectiveness is noted at the end of the implementation and measures the difference between baseline data and the level at which the problems that necessitated the interventions are effectively solved (desired results at the end of the implementation).</p>
Efficacy	E f f i c a c y indicators	<p>The World Bank (1996: 5) argues that; "Efficacy indicators measure how well the results at one level of project implementation have translated into results at the next level: the efficiency of inputs, the effectiveness of project outputs, and sustainability of project impacts". "Efficacy indicators thus measure a project's efficacy in achieving its objectives rather than its results" (Rabie, 2014: 214).</p>
Sustainability	Sustainability indicators	<p>The concept "sustainability" is a dynamic and multi-dimensional concept and comes from the Latin <i>sustinere</i>, which means to "hold up" (Aagaard, 2014: 181). Something is sustainable if it can endure or persist over time. Sustainability is therefore about self-preservation (Thiele, 2013: 12).</p> <p>Thus, for policy products and processes to be sustainable is to avoid collapsing (Thiele, 2013: 12). This type of indicator measures "the persistence of the project benefits over time, particularly after project funding ends" (Rabie & Cloete, 2012: 207). Sustainability may, however, go beyond the costs and the ability to produce benefits to the target beneficiaries (Mosse & Sontheimer, 1996: 15). According to Thiele (2013: 9), sustainability requires a balanced and integrated response to issues related to the state of the ecology, economic prosperity, and social inclusion.</p>
Results	R e s u l t s indicators	<p>Measuring the "consequences of activities in relation to objectives at project or programme level" (Rabie, 2011: 132).</p>
Accountability	Accountability indicators	<p>Accountability indicators measure the availability of resources and whether they have been "applied to the activities for which they were targeted or allocated" (Mosse & Sontheimer, 1996: 14).</p>

Relevance	Relevance indicators	According to The World Bank (1996: 5); "Some projects have intended impacts on higher-order objectives that are not captured by direct outcome indicators". For instance, as The World Bank (1996: 5) further argues, "some projects have national or sectoral objectives, and for them, the impact must be measured at those levels. Projects may also have unintended – often negative – impacts". Thus; "Relevance indicators measure trends in the wider policy problems that project impacts are expected to influence". Therefore, "depending on the project, these may include: <ul style="list-style-type: none"> • improved national health as measured by health indicators (through improved healthcare and health system performance); • increased farm profits and reduced food costs (through improved farming practices); • reduced transportation costs and expanded economic development (through road construction or improvement); and • improved economic growth and enhanced consumer wellbeing (through expanded electrification, pollution controls, and other new technology)" (Mosse & Sontheimer, 1996: 13, The World Bank 1996: 5).
Risk	Risk indicators	The World Bank (1996: 5) argues that "risk indicators measure the status of the exogenous factors identified as critical through the risk and sensitivity analysis (risk and enabling factors) performed as part of a project's economic analysis". "These are the factors that are determined to be the most likely to have a direct influence on the outcome of various aspects of a project – the assumptions are made about conditions external to the project" (The World Bank, 1996: 5). This is because; "A project's objectives can only be achieved if the logical means-end relationship of the project elements is secure and the external risk factors are favourable" (Mosse & Sontheimer, 1996: 14).
Signs or warnings for potential risk	Early pointers: Intermediate and leading indicators	The World Bank (1996: 5) states that; "At times, information on likely project results is needed before final performance data are available. At other times, it is important to gauge whether a project is on track even though final results have not yet been achieved". In both cases, "intermediate or leading indicators can provide an early assessment of performance". Thus, "intermediate indicators measure intermediate results or intervening steps toward project objectives" (The World Bank, 1996: 5). "They usually measure changes associated with the ultimate impact sought but for which information can be obtained earlier" (The World Bank, 1996: 5). Two points to remember are: First, "intermediate indicators often represent preliminary links in a causal chain, so their usefulness depends on the validity of the hypothesis that links those measures to final performance results" (Mosse & Sontheimer, 1996: 15-16). Second, "intermediate indicators sometimes represent results from initial or selected programme sites, so their usefulness depends on the extent to which they prove to be representative. In addition, it is sometimes possible to identify leading indicators (or indexes of indicators) that are linked with longer-term results" (Mosse & Sontheimer, 1996: 15-16). A third point is that "while similar to intermediate indicators in concept, leading indicators generally have multiple applications and a statistically valid record of reliability" (Mosse & Sontheimer, 1996: 15-16).
Relationship between indicators	Evaluative indicators	Evaluative indicators conclude the relationship between indicators.
Time series	Time series information indicators	Time series information indicators describe the situation through a time series.
Make predictions	Predictive indicators	Predictive indicators are like an early warning system that provides the information that helps to make the right decision before a risk occurs (Frenehard, 2015: 1).
Relationship between indicators and technical and scientific insights	System indicators	System indicators combine individual measures with technical and scientific insights.
performance	Performance indicators	These are composite indicators that provide a tool for comparison by combining descriptive indicators with targets and target dates.

Source: Adapted from Rabie and Cloete (2012: 207), The World Bank (1996), Mosse &

Sontheimer (1996: 13), Uwizeyimana (2015: 71-72) and Uwizeyimana (2012: 72).

A close analysis of the types of evaluation indicators listed in Table 6 shows that there seem to be similarities between the evaluation indicators that are classified based on the management level at which they are used and the indicators that are classified based on the levels of the logframe, as well as classification of indicators according to evaluation perspectives. While there might be nuances, especially those based on the ethics perspective, governance perspective, HRM perspective, and the Balanced Scorecard of Kaplan and Norton (which is a composite indicator), all the indicators classified based on what they measure (in this table) seem to be generally concerned with measuring “the gap” (i.e. success or failure to achieve the intended objectives and goals) in terms of efficiency, effectiveness, and economic uses (or transformation) of input to produce the outputs (goods and services) that are expected to produce desired outcomes and impact.

Conclusion and Recommendations

The objective of this article was to describe and explain what evaluation indicators are, what their role is in systematic evaluations, and to differentiate them according to the different classification frameworks gleaned from the current literature about evaluation indicators. The article confirms that there are many evaluation indicators in the literature and has discussed five of them, namely, the classification of evaluation indicators based on: (1) the logframe; (2) the strategic management levels at which they are applied; (3) the evaluation perspective adopted by the evaluators; (4) based on their nature; and (5) the specific aspect of the indicators’ measure. However, while each one of these five classification frameworks is unique and free-standing, none of them is mutually exclusive to the others. This is because the M&E concepts often have “similar or even identical nomenclature” in literature (Mackay, 2008: 3).

The different tables included in this article show that they overlap on many levels. This is because many of the indicators have been reported or reproduced by the same or different authors under different terms or concepts or different categories or classifications. For example, while the classification framework based on the logframe produces five types of indicators and provides a more holistic approach because it emphasises the different focuses of evaluation and links them to the different types of evaluations, many of the aspects it focusses on are also included in the classification of evaluation indicators based on the evaluation perspective adopted by the evaluators, which has seven main types of evaluation indicators. The only difference is that the classification of evaluation indicators based on the logframe is more holistic and covers every aspect of government intervention, while the classification of indicators based on the evaluator’s perspective emphasises the perspective of the evaluators. It is possible to focus more on some aspects of the evaluation at the expense of others when evaluation is based on a particular perspective shown by the evaluator.

Perhaps the most difficult of all classification frameworks is the classification of indicators based on where they are used on the management levels of hierarchy in the organisation. This is because this classification does not give specific details on the

indicators that are needed to evaluate success or failure at the vision, mission, projects, and programme levels. While the classification of evaluation indicators based on the management level states that the type and nature of the indicators needed at strategic, middle, and lower management levels can be tangible or intangible indicators, the same is possible when other types of indicators' classifications are used.

The article has shown that the classification of evaluation indicators based on their types of nature (i.e., what indicators are, as opposed to what they do or used to do) listed over ten broad types of evaluation indicators.

In addition, the analysis in this article has shown that the classification of evaluation indicators based on what they measure produced over 20 types of evaluation indicators. However, since the focus is on what evaluation indicators measure, this type of classification includes the indicators already listed in the classification of indicators based on the logframe, and to a great extent, those classified based on nature and perspective (economy, efficiency, and effectiveness). The main similarity between the classification of indicators based on what they measure, and the classification based on the evaluator's perspective, is that the former focus on what is measured to determine the appropriate types of indicators while in the latter the individual evaluator's perspective determines the type of the indicators to be used.

Furthermore, the difference between the classification of evaluation indicators based on the logframe and classification of indicators based on the management level at which they are applied appears to be that the logframe ranks the process that must be followed to achieve the desired policy impact; while the ranking of evaluation indicators based on the management level focuses more on the different types of indicators used at different organisational hierarchies to evaluate their decisions and actions. However, the two classification systems are not mutually exclusive. The common denominators between the classification of indicators based on the logframe, the classification of indicators based on the management level at which they are applied, the classification of indicators based on the evaluators' perspectives, and the classification of indicators based on what they measure, is that all of them emphasise the need for appropriate types of indicators to evaluate the effectiveness and efficiency. They are also all focused on the use of the input, and the processes to convert the inputs into outputs, outcomes, and impacts. All indicators' classification frameworks discussed in this article consider that outputs, outcomes, and impacts of government interventions could be tangible or intangible, direct or indirect, quantitative or qualitative. They also focus on finding out whether government interventions have been successful or failed, and the effects of such success or failure on the intended or unintended communities or beneficiaries. In summary, while the five indicators' classification frameworks discussed in this article have nuances, and are not mutually exclusive, it appears that all types of evaluations strive to use appropriate evaluation indicators to evaluate success in terms of input, processes, outputs, outcomes and impacts of the government interventions at different times and the different management levels.

Therefore, it is recommended that each classification framework be treated as a free-standing analytical and practical tool. The author believes that the synthesis of different

indicator frameworks provided in this article will assist scholars, policymakers, evaluation experts, and practitioners in choosing the appropriate types of evaluation indicators to apply in different contexts. Except the classification of indicators by their nature and what they are used to do, which are clearly comprehensive, there is no reason to believe that any indicators' classification is better than the others. Therefore, the decision to focus on, or use any specific indicators' classification framework in the academic analysis or practice should be guided by the researchers' and practitioners' perspectives and the objectives they want to achieve. However, it is important for the researchers and practitioners to state and identify clearly the specific indicators' framework and perspective they have chosen to avoid confusing the readers.

References

- Aagaard, A. (2014). Sustainability: A key business value of the 21st century. *Journal of Multi Business Model Innovation and Technology*, 1(1):181-194.
- Alkin, M. C. & Christie, A. C. (2004). An evaluation theory tree, in Alkin M.C. (Ed.). *Evaluation roots: Tracing Theorists' views and influences*. Sage Publications, Thousand Oaks, CA.
- Atkinson, D. & Wellman, G. (2003). *A monitoring and evaluation manual for municipal water and sanitation management*, WRC Report No. 1287/1/03. Water Research Commission of South Africa, Silowa Printers, Pretoria.
- Auriacombe, C. (2011). The role of theories of change and programme logic models in policy evaluation. *African Journal of Public Administration*, 4(2):36-53.
- Carley, W. M. (1981). Rough flying: Air traffic controllers put Reagan on the spot with threat to strike. *Wall Street Journal* (1):1-22.
- Chen, H. (2005). *Practical programme evaluation, Assessing and improving planning, implementation and effectiveness*. Sage Publications, Thousand Oaks.
- Cloete, F. (2006). Policy evaluation, in Cloete, F., Wissink, H., & De Coning, C. (Eds), *Improving public policy: from theory to practice*. Van Schaik, Hatfield, Pretoria.
- Cloete, F. (2009). Evidence-based policy analysis in South Africa: Critical assessment of the emerging government-wide monitoring and evaluation system. *South African Journal of Public Administration*, 44(2):293-311.
- Cloete, F. (2015). Measuring progress towards sustainable development in Africa. *African Journal of Public Affairs*, 8(1):51-74.
- Cloete, F. & Auriacombe, C. (2013). Measuring empowerment in the democratic developmental state. *Africa Insight* 43, (1):14-26.
- Cloete, F. & De Coning, C. (2011). *Improving public policy*, 3rd edition. Van Schaik, Pretoria.
- Cloete, F., Rabie, B. & De Coning, C. (2014). *Evaluation management in South Africa and Africa*. Sun Press imprint, Stellenbosch.
- Cloete, F. & Wissink, H. (2010). *Improving Public Policy*. Van Schaick Publishers, Pretoria.
- Cloete, F. & Uwizeyimana, D. E. (2021). *Internal Handbook: Indicator Development, Application and Management for Sustainable Development*. MA- Coursework: University of Johannesburg, Johannesburg.
- De Coning, C. (2006). The nature and role of public policy, in Cloete, F., Wissink, H., & De Coning, C. (Eds.), *Improving public policy: From theory to practice*. Van Schaik, Pretoria.
- De Silva, M. J., Breuer, E., Lee, L., Asher, L., Chowdhary, N., Lund, C. & Patel, V. (2014). Theory of change: A theory-driven approach to enhance the Medical Research Council's framework for complex interventions, *Trials*, 15 (1):267. Available at: <http://doi.org/10.1186/1745-6215-15-267> (Accessed on: 10 June 2018).

- EU Integration Office. 2011. Guide to the logical framework approach. Republic of Serbia Government European Integration Office. Available at: <chrome-extension://efaidnbmnnnibpajpcglclefindmkaj/viewer.html?pdfurl=http%3A%2F%2Fwww.evropa.gov.rs%2FEvropa%2FShowDocument.aspx%3FType%3DHome%26Id%3D525&clen=928225>. (Accessed: 24 November 2021).
- Frenehard, T. (2015). *What's a predictive indicator?* Available at: <https://www.digitalistmag.com/technologies/analytics/2015/06/19/predictive-indicator-02963739> (Accessed on: 19 July 2018).
- Ghenna, K. (2006). Major problems in policy implementation. *Econ-Focus*. 3(6), Paper presented at the Addis Ababa Chamber of Commerce, Available at: <http://www.eeaeccon.org/econ-focus/vol3%20No6/kebour.htm> (Accessed on: 16 August 2018).
- Ile, I. U., Eresia-Eke, C. & Allen-Ile, C. (2012). *Monitoring and evaluation of policies, programmes and projects*. Van Schaik, Pretoria.
- Ismail, N., Bayat, S. & Meyer, I. (1997). *Local government*, International Thomson Publishing, Johannesburg.
- Kusek, J. Z. & Rist, R. C. (2004). *Ten steps to a results-based monitoring and evaluation system*. World Bank, Washington, D.C.
- Mackay, K. (2008). Helping countries build government monitoring and evaluation systems. World Bank contribution to evidence-based policymaking. In Segone, M. 2008. ed. *Bridging the gap: The role of monitoring and evaluation in evidence-based policymaking*. UNICEF *Evaluation Working Papers Issue No. 12*, New York: UNICEF, 88-97.
- Mathison, S. (2005). *Encyclopaedia of evaluation*. Sage Publications, London.
- McDavid, J. C. & Hawthorn, L. R. L. (2006). *Program evaluation & performance measurement: An introduction to practice*. Sage Publications, London.
- Meadows, D. (1998). *Indicators and Information Systems for Sustainable Development: A Report to the Balaton Group*. Available at: https://edisciplinas.usp.br/pluginfile.php/106023/mod_resource/content/2/texto_6.pdf. (Accessed: 27 July 2018).
- Miles, I. (1989). *Social indicators for human development*. Frances Pinter, London.
- Mngxaso, M. H. (2015). *The institutionalisation of evaluation in the Mpumalanga Provincial Legislature*. MA Dissertation submitted at the University of Johannesburg.
- Mosse, R. & Sontheimer, L. E. (1996). *Performance monitoring indicators handbook*. *World Bank Technical Paper No. 334*, The World Bank, Washington, D.C.
- Nickols, F. W. (2005). *Strategic decision making: Commitment to strategic action*. Available at: http://home.att.net/~essays/strategic_decision_making.pdf. (Accessed on: 31 January 2010).
- Organisation for Economic Co-operation and Development (OECD). (2002). *Evaluation and aid effectiveness: Glossary of key terms in evaluation and results-based management*, OECD, Paris.
- Organisation for Economic Co-operation and Development (OECD). (2010). *Glossary of terms in evaluation and results-based management*. Development Assistance Committee (DAC), Paris.
- Oxford Paperback Dictionary & Thesaurus. (2009). Oxford University Press, Oxford.
- Patton, M. Q. (2000). Language matters: How and language matters in evaluation. *New Directions for Evacuations*, 85(1):5-15.
- Pereira, J. & Othman, A. (2010). *Sustainable development indicators – Providing environmental statistics for national reporting*. Available at: <http://www.statssa.gov.za/commonwealth/presentations/Paper-B-Othman.pdf>. (Accessed on: 07 June 2018).
- Pintér, L., Swanson, D. & Barr, J. E. (2004). *Use of Indicators in Policy Analysis Annotated Training Module Prepared for the World Bank Institute*. Available at: file:///C:/Users/dominiqueu/Downloads/measure_use_indicators.pdf. (Accessed: 18 November 2021).
- Public Service Commission (PSC). (2008). *Basic concepts in monitoring and evaluation*. Available at: <http://www.psc.gov.za/documents/docs/guidelines/PSC%206%20in%20one.pdf>. (Accessed on: 20 March 2017).

- Rabie, B. (2011). *Improving the systematic evaluation of local economic development results in South African local government*. Doctoral dissertation, Stellenbosch University, Stellenbosch.
- Rabie, B. (2014). Indicators for evidence-based measurement in evaluation, in Cloete, F., Rabie, B. & De Coning, C. (Eds), *Evaluation management in South Africa and Africa*, African Sun Media, Stellenbosch.
- Rabie, B. & Cloete, F. (2009). A new typology of monitoring and evaluation approaches. *Administratio Publica*, 17(1) 76-97.
- Rabie, B. & Cloete, F. (2012). Policy evaluation, in Cloete, F & De Coning, C (Eds), *Improving public policy: Theory, practice and results*, 3rd edition, Van Schaik, Pretoria.
- Rammstedt, B. (2009). *Working Paper Series of the Council for Social and Economic Data (RatSWD)*. Available at: https://www.ratswd.de/download/RatSWD_WP_2009/RatSWD_WP_119.pdf. (Accessed on: 10 July 2018).
- Scriven, M. (1967). *The methodology of evaluation*, in R. W. Tyler, R. M. Gagne & M. Scriven (Eds), *Perspectives of curriculum evaluation*. Rand McNally, Chicago, USA.
- Stufflebeam, D. L., & Shinkfield, A. J. (2007). *Evaluation theory, models and applications*. San Francisco, CA Jossey-Bass.
- Thiele, L. P. (2013). *Sustainability*, Polity:Cambridge.
- Turner, J. R. (1993). *The handbook of project-based management*. McGraw-Hill, London.
- United Nations (UN). (2015). *Transforming our world: The 2030 agenda for sustainable development*. Available at: <https://sustainabledevelopment.un.org/post2015/transformingourworld> (Accessed on: 09 July 2018).
- United Nations Evaluation Group (UNEG). (2012). *National evaluation capacity development: Practical tips on how to strengthen national evaluation systems: A Report of UNEG task force on national evaluation capacity development*. Washington: UNICEF.
- Uwizeyimana, D. E. (2012). *The effects of party-political interests on policy implementation effectiveness: Low-cost housing allocation in Cape Town-UniCity, 1994-2008*. Doctoral dissertation, University of Johannesburg, Johannesburg.
- Uwizeyimana, D. E. (2015). New public management (NPM) principles in the water services: The city of Johannesburg. *Administratio Publica*, 23(1) 70-96.
- Uwizeyimana, D. E. (2017). The melting pot – Zinhle Mncube, 24 August, *Practicality of governance in SA's municipal election – Interview with Dominique Uwizeyimana*. Available at: the_melting_pot_zinhle_mncube_24_aug_practicality_of_governance_in_sas_municipal_election_-_dominique_uwizeyimana_medium.m4a (Accessed on: 22 July 2018).
- Uwizeyimana, D. E. (2018a). *The challenges (limitations) of the programme logic frame (logframe) as a tool for policy, programme and project implementation and evaluation*. Paper submitted to the 9th Annual International Conference on Social Sciences, Cape Town.
- Uwizeyimana, D. E. (2018b). Progress against Rwanda's Vision 2020 key indicators' targets. *International Journal of Management Practice (IJMP)*.
- Uwizeyimana, D. E. (2020). Monitoring and Evaluation in a Chaotic and Complex Government Interventions' Environment. *International Journal of Business and Management Studies*, 12(1):1-17.
- Uwizeyimana, D. E. (2020a). The logframe as a monitoring and evaluation tool for government interventions in a chaotic and complex government interventions' environment. *Africa's Public Service Delivery & Performance Review*, 8(1):1-12.
- Uwizeyimana, DE. (2020b). UBUNTU and the Challenges of Africa-Rooted Public Policy Evaluation Approach. *Journal of African Foreign Affairs (JoAFA)*, 7(3): 113-129.
- Uwizeyimana, DE. (2001). The need and feasibility of a separate Africa-rooted programme evaluation approach. *African Journal of Development Studies (AJDS)*. 11(3): 101-120.
- Van der Waldt, G. (2012). Measuring the goodness of governance: Macro, intermediate and micro perspectives. *African Journal of Public Affairs*, 5 (1) 83-96.

Veenhoven, R. (2007). Subjective measures of well-being, in McGillivray, M. (Ed.): *Human well-being – concept and measurement*, Cambridge University Press, Cambridge, UA.

Weiss, C. H. (1997). If program decision hinged only on information: A response to Patton. *Evaluation Practice*, 9(1):15-28.

World Bank. (1996). *Performance Monitoring Indicators: A Handbook for Task Managers* (Operational Policy Department). World Bank, Washington, D.C.