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THE ORGANISATIONAL AND ECONOMIC MECHANISM FOR EVALUATING THE EFFECTIVENESS OF MARKETING PROMOTION OF EDUCATIONAL SERVICES

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Abstract. An evaluation mechanism is only as effective as the metrics on which it relies. This article examines the metrics used to evaluate marketing promotion in higher education in relation to the outcomes they are intended to represent. Ten metrics are characterised along three dimensions: adoption, defined as the share of institutions reporting a given metric; readability lag, defined as the number of months required before the metric can be observed; and diagnosticity, defined in this study as the extent to which a metric ranks institutions consistently with the stated objective. Diagnosticity is measured using both rank correlation and the proportion of institution pairs ordered consistently with the objective.

Using a panel of twenty institutions, the analysis reveals a pronounced inverse relationship among these dimensions. Adoption is negatively correlated with diagnosticity ($r = -0.732$) and with readability lag ($r = -0.926$), indicating that more widely reported metrics tend to be available earlier but are less closely aligned with the ordering implied by the objective. Eight of the ten metrics order institution pairs consistently with the objective in fewer than 50 per cent of pairwise comparisons. Website visits and clicks each achieve a pairwise ordering accuracy of 31.1 per cent, below the 50 per cent reference level.

This pattern reflects an important measurement challenge. Metrics that are immediately observable primarily capture activity, whereas metrics that more closely reflect institutional outcomes become available only after a substantial delay. Verified enrolment has a readability lag of 6.8 months. The metric with the highest diagnosticity is verified enrolment relative to programme capacity, with a Spearman rank correlation of 0.61 and a pairwise ordering accuracy of 78.4 per cent.

On the basis of these findings, the article develops a two-stage evaluation mechanism designed to reconcile timeliness with diagnostic relevance. At month three, applications per available place are used as an early indicator. This measure correlates at 0.56 with the final outcome and achieves a pairwise ordering accuracy of 74.7 per cent. At month nine, an audit based on verified enrolment relative to capacity is conducted. Applying the proposed mechanism to the twenty institutions changes the ranking of sixteen of them relative to a website-traffic-based ordering, with rank changes ranging from six to twelve positions.

The mechanism is also evaluated using two split-sample checks. In both cases, the same early and final indicators are retained, with correlations of 0.66 and 0.64, respectively, providing evidence of stability within the available sample. The resulting framework therefore uses a single early indicator at month three and a single outcome-based audit at month nine, rather than relying on a larger set of activity-oriented metrics.

Keywords: marketing effectiveness; evaluation mechanism; metric diagnosticity; leading indicators; higher education; Uzbekistan.

Annotatsiya. Baholash mexanizmining samaradorligi u tayanadigan ko'rsatkichlarning sifatiga bevosita bog'liq. Ushbu maqolada oliy ta'limda marketing targ'iboti samaradorligini baholashda qo'llaniladigan ko'rsatkichlar ular ifodalashi lozim bo'lgan natijalar bilan o'zaro bog'liqlikda o'rganiladi. O'nta ko'rsatkich uchta mezon bo'yicha tavsiflanadi: qo'llanish darajasi (adoption) — muayyan ko'rsatkichni hisobotlarda aks ettiruvchi ta'lim muassasalari ulushi; ma'lumotning mavjud bo'lish kechikishi (readability lag) — ko'rsatkichni kuzatish imkoniyati paydo bo'lishigacha talab etiladigan oylar soni; va diagnostiklik (diagnosticity) — ushbu tadqiqotda ko'rsatkichning ta'lim muassasalarini belgilangan maqsadga muvofiq ravishda tartiblash darajasi sifatida ta'riflanadi. Diagnostiklik darajali korrelyatsiya hamda maqsadga muvofiq tartiblangan ta'lim muassasalari juftliklarining ulushi asosida baholanadi.

Yigirmata ta'lim muassasasidan iborat panel ma'lumotlari asosidagi tahlil mazkur mezonlar o'rtasida sezilarli teskari bog'liqlik mavjudligini ko'rsatadi. Ko'rsatkichlarning qo'llanish darajasi diagnostiklik bilan manfiy korrelyatsiyaga ($r = -0.732$), shuningdek, ma'lumotning mavjud bo'lish kechikishi bilan ham manfiy korrelyatsiyaga ($r = -0.926$) ega. Bu kengroq qo'llaniladigan ko'rsatkichlar odatda ertaroq mavjud bo'lishini, biroq belgilangan maqsad asosidagi tartiblash bilan nisbatan kamroq mos kelishini ko'rsatadi. O'nta ko'rsatkichdan sakkiztasi ta'lim muassasalari juftliklarini maqsadga muvofiq ravishda 50 foizdan kam holatda to'g'ri tartiblaydi. Veb-saytga tashriflar va bosishlar (*clicks*) ko'rsatkichlarining har biri bo'yicha juftliklarni to'g'ri tartiblash aniqligi 31,1 foizni tashkil etib, 50 foizlik mezon darajasidan past bo'lgan.

Mazkur holat baholash bilan bog'liq muhim metodologik muammoni aks ettiradi. Darhol kuzatilishi mumkin bo'lgan ko'rsatkichlar asosan joriy faollikni ifodalasa, ta'lim muassasasining yakuniy natijalarini aniqroq aks ettiruvchi ko'rsatkichlar sezilarli vaqt kechikishi bilan mavjud bo'ladi. Tasdiqlangan qabul (*verified enrolment*) ko'rsatkichi bo'yicha ma'lumotning mavjud bo'lish kechikishi 6,8 oyni tashkil etadi. Eng yuqori diagnostiklikka ega ko'rsatkich — ta'lim dasturi sig'imiga nisbatan tasdiqlangan qabul (*verified enrolment relative to programme capacity*) bo'lib, uning Spearman darajali korrelyatsiya koeffitsiyenti 0,61 ni tashkil etadi.

Qabul sikli yakunlanishidan oldin mavjud bo'ladigan ko'rsatkichlar orasida sarflangan mablag' birligiga to'g'ri keladigan arizalar soni (*applications per unit spend*) eng yuqori diagnostiklikni namoyon etadi. Uchinchi oyda ushbu ko'rsatkichning Spearman korrelyatsiyasi 0,56 ni, juftliklarni to'g'ri tartiblash aniqligi esa 82,6 foizni tashkil etadi. Shunga qaramay, mazkur ko'rsatkich ta'lim muassasalarining atigi 35 foizi tomonidan hisobotlarda aks ettiriladi. Uni ikkinchi erta ko'rsatkich bilan birlashtirish juftliklarni to'g'ri tartiblash aniqligini 75,3 foizgacha pasaytiradi, bu esa ushbu tanlanmada qo'shimcha ko'rsatkichlarning kiritilishi baholash aniqligini avtomatik ravishda oshirmasligini ko'rsatadi.

Taklif etilgan mexanizmning barqarorligi tanlanmani ikki qismga ajratish asosidagi ikkita tekshiruv orqali ham baholandi. Har ikkala holatda ham bir xil erta va yakuniy ko'rsatkichlar saqlanib, mos ravishda 0,66 va 0,64 korrelyatsiya koeffitsiyentlari qayd etildi. Bu mavjud tanlanma doirasida natijalarning barqarorligini ko'rsatadi. Shu asosda taklif etilayotgan baholash mexanizmi ko'plab faoliyatga yo'naltirilgan ko'rsatkichlardan foydalanish o'rniga, uchinchi oyda bitta erta indikator va to'qqizinchi oyda natijaga asoslangan bitta yakuniy auditdan foydalanishni nazarda tutadi.

Kalit so'zlar: marketing samaradorligi; baholash mexanizmi; ko'rsatkich diagnostikligi; yetakchi indikatorlar; oliy ta'lim; O'zbekiston.

Аннотация. Эффективность механизма оценки непосредственно зависит от качества показателей, на которых он основывается. В данной статье показатели, используемые для оценки эффективности маркетингового продвижения в сфере высшего образования, рассматриваются во взаимосвязи с результатами, которые они должны отражать. Десять показателей характеризуются по трём параметрам: уровень использования (*adoption*) — доля образовательных учреждений, отражающих соответствующий показатель в отчётности; временной лаг доступности данных (*readability lag*) — количество месяцев до момента, когда показатель становится доступным для наблюдения; и диагностичность (*diagnosticity*) — определяемая в данном исследовании как степень, в которой показатель ранжирует образовательные учреждения в соответствии с установленной целью. Диагностичность оценивается как с помощью ранговой корреляции, так и на основе доли пар образовательных учреждений, упорядоченных в соответствии с целевым показателем.

Анализ панельных данных по двадцати образовательным учреждениям выявляет выраженную обратную взаимосвязь между рассматриваемыми параметрами. Уровень использования показателей отрицательно коррелирует с диагностичностью ($r = -0,732$), а также с временным лагом доступности данных ($r = -0,926$). Это указывает на то, что более широко используемые показатели, как правило, становятся доступными раньше, однако в меньшей степени соответствуют ранжированию, определяемому установленной целью. Восемь из десяти показателей упорядочивают пары образовательных учреждений в соответствии с целевым показателем менее чем в 50% парных сравнений. Для посещений веб-сайта и кликов точность парного ранжирования составляет по 31,1%, что ниже контрольного уровня в 50%.

Данная закономерность отражает важную методологическую проблему оценки. Показатели, доступные для непосредственного наблюдения, преимущественно отражают текущую активность, тогда как показатели, более тесно связанные с конечными результатами образовательного учреждения, становятся доступными со значительной временной задержкой. Временной лаг для показателя подтверждённого зачисления (*verified enrolment*) составляет 6,8 месяца. Наибольшей диагностичностью обладает показатель подтверждённого зачисления относительно вместимости образовательной программы (*verified enrolment relative to programme capacity*), для которого коэффициент ранговой корреляции Спирмена составляет 0,61.

Среди показателей, доступных до завершения цикла приёма, наибольшую диагностичность демонстрирует количество заявлений на единицу расходов (*applications per unit spend*). На третьем месяце коэффициент корреляции Спирмена для данного показателя составляет 0,56, а точность парного ранжирования — 82,6%. При этом данный показатель отражается в отчётности только 35% образовательных учреждений. Его объединение со вторым ранним индикатором снижает точность парного ранжирования до 75,3%, что свидетельствует о том, что включение дополнительных показателей в данной выборке не приводит автоматически к повышению точности оценки.

Устойчивость предлагаемого механизма дополнительно оценивалась с помощью двух проверок на разделённых подвыборках. В обоих случаях сохранялись одни и те же ранний и итоговый индикаторы, при этом коэффициенты корреляции составили 0,66 и 0,64 соответственно, что свидетельствует об устойчивости результатов в пределах имеющейся выборки. На этой основе предлагаемый механизм предусматривает использование одного раннего индикатора на третьем месяце и одного итогового аудита, основанного на конечном результате, на девятом месяце вместо применения более широкого набора показателей текущей активности.

Ключевые слова: эффективность маркетинга; механизм оценки; диагностичность показателей; опережающие индикаторы; высшее образование; Узбекистан.

INTRODUCTION

Institutions that invest in promotion generally evaluate the performance of their promotional activities using a range of observable metrics. Evaluation reports commonly include measures such as impressions delivered, clicks recorded, website visits, followers gained, and enquiries received. Increases in these indicators may subsequently be interpreted as evidence of campaign performance and may inform decisions concerning future promotional expenditure.

The individual figures reported by these metrics may be accurate; however, a separate question is whether they can distinguish between institutions with relatively more and less effective promotional performance. This article examines that question by assessing the extent to which commonly reported metrics correspond to the stated objective of promotional evaluation. Such correspondence can be treated as an empirically testable property of a metric rather than solely as a matter of managerial judgement.

The empirical test applied in this study is direct. For each metric, the twenty institutions in the panel are ranked, and the resulting ranking is compared with the ranking generated by the study's objective measure: the cost of acquiring an enrolment. A metric is considered diagnostic to the extent that its ordering of institutions corresponds to the ordering produced by the objective measure. Metrics producing different or inverse rankings consequently exhibit lower levels of diagnosticity.

Three constructs organise the analysis. Adoption measures how widely a metric is reported across institutions. Readability lag measures the period between promotional expenditure and the point at which a metric becomes available for observation. The analysis examines the extent to which this lag is associated with observed patterns of metric adoption. Diagnosticity, as operationalised in this study, measures how effectively a metric discriminates among institutions in accordance with the objective measure. It is assessed using both rank correlation with the objective and the proportion of institution pairs ordered consistently with it. The latter provides an intuitive reference level of 50 per cent for pairwise ordering.

The contribution of the article is threefold. First, it documents a substantial inverse association between adoption and diagnosticity, with a correlation of -0.732 , and examines the role of readability lag in accounting for this pattern. Second, it shows that eight of the ten metrics examined achieve pairwise ordering accuracy below the 50 per cent reference level and investigates the measurement characteristics underlying this result. Third, it develops a parsimonious evaluation mechanism based on two selected metrics and examines whether combining additional indicators improves its diagnostic performance. The results indicate that, within the available sample, the composite specification does not improve upon the two-metric mechanism.

LITERATURE REVIEW

Ambler's analysis of marketing performance measurement highlights a central challenge in the field: organisations have access to numerous marketing metrics, while the relationship between individual metrics and the objectives they are intended to represent is not always clearly established [1]. Farris, Bendle, Pfeifer and Reibstein provide a systematic account of widely used marketing metrics and their construction, offering a basis for understanding how different dimensions of marketing performance can be quantified [5]. Rust, Ambler, Carpenter, Kumar and Srivastava examine the broader problem of marketing productivity and discuss the difficulties involved in linking marketing expenditure to subsequent outcomes [14].

Pauwels and colleagues examine the role of marketing dashboards in organising and interpreting marketing information, drawing attention to the importance of selecting metrics that are both available and relevant for managerial decision-making [13]. In the broader field of performance measurement, Neely, Gregory and Platts provide a framework for designing performance measurement systems and emphasise the need to align individual measures with organisational objectives [12]. Kaplan and Norton's distinction between leading and lagging indicators provides a conceptual foundation for considering the timing with which performance information becomes available [9]. In the present study, this temporal dimension is operationalised through the readability lag construct.

The literature on performance measurement under incentive systems provides an additional perspective relevant to the selection and interpretation of marketing metrics. Goodhart's observation concerning the relationship between measures and targets [6], together with Campbell's related discussion of the use of quantitative social indicators [4], highlights the possibility that the informational properties of a measure may change when that measure becomes an explicit target for decision-making or performance assessment. Bevan and Hood examine related effects empirically in a public-service context, demonstrating how target-based performance systems can generate behavioural responses that affect reported measures without necessarily producing equivalent changes in the underlying outcome of interest [2].

This perspective is relevant to the present analysis because metrics with shorter readability lags may

also be more directly responsive to promotional expenditure. For example, the number of impressions can be increased through additional media expenditure. By contrast, the cost of acquiring an enrolment depends jointly on expenditure and realised enrolment outcomes and therefore cannot be interpreted in the same manner as a directly purchasable activity metric. This distinction provides a basis for examining whether readily observable marketing metrics differ from outcome-related measures in their diagnostic value.

The diagnosticity measure employed in this study uses rank correlation based on Spearman's approach [15], while the pairwise concordance measure follows the underlying logic of Kendall's rank-based framework [10]. Pairwise concordance is reported alongside rank correlation because it provides an intuitive benchmark for evaluating the consistency of institutional rankings.

Under an uninformative ordering, the expected reference level for pairwise concordance is 50 per cent. Values above this level indicate increasing agreement with the ordering produced by the objective measure, whereas values below 50 per cent indicate a greater prevalence of discordant than concordant pairwise orderings. Reporting both measures therefore makes it possible to evaluate diagnosticity from two complementary perspectives: the overall correspondence between rankings and the proportion of individual institution pairs ordered consistently with the objective.

Attributing marketing outcomes to individual channels and activities remains an important challenge in marketing performance measurement. Li and Kannan examine attribution in a multichannel environment [11], while Kannan and Li review the broader development of digital marketing and the methodological challenges associated with linking marketing activities to consumer outcomes [8].

The present article does not attempt to resolve channel-level attribution. Instead, the empirical design operates at the institutional level: the marketing metrics are measured as institution-level aggregates, while the objective measure is constructed as an institution-level ratio. Consequently, the analysis evaluates whether the selected metrics reproduce the relative ordering of institutions according to the stated objective without requiring the contribution of each individual marketing channel to be separately identified.

RESEARCH METHODOLOGY

The panel covers twenty higher education institutions in one admission cycle. Ten metrics are examined, listed in Table 1 with the three characteristics used throughout.

Table 1
Metrics and their characteristics¹

Characteristic	Construction
Adoption	Share of institutions reporting the metric in their evaluation of promotion
Readability lag	Months between the spending and the earliest point the metric can be read
Kind	Level if the metric is a count, ratio if it divides one quantity by another
Diagnosticity	Rank correlation between the metric's ordering of institutions and the objective's
Pairwise concordance	Share of institution pairs the metric orders as the objective orders them

The objective measure is the cost of acquiring an enrolment, calculated as promotional expenditure divided by the number of enrolments. Because a lower cost per enrolment represents a more favourable outcome under this measure, its negative value is used for ranking purposes so that higher ranking values consistently correspond to stronger performance.

Cost per enrolment therefore appears in the table of metrics with a diagnosticity value of 1.000 and a pairwise concordance of 100 per cent. These values follow directly from the definition of the benchmark and should not be interpreted as empirical findings. The metric is included because it serves as the reference against which the diagnosticity of the other metrics is assessed and because it is reported by 15 per cent of the institutions in the sample.

Diagnosticity is calculated using two complementary measures. Rank correlation summarises the overall correspondence between the ordering produced by a given metric and that produced by the objective measure.

¹ Author's development

Pairwise concordance is calculated across all 190 possible pairs of the twenty institutions and measures the proportion of pairs for which the metric produces an ordering consistent with that of the objective measure.

The second measure is reported because it provides a clearly interpretable reference level. Under an uninformative ordering, the expected pairwise concordance is 50 per cent. A value below 50 per cent indicates that discordant pairwise orderings occur more frequently than concordant ones. Accordingly, such a metric provides an ordering that is, on average, less consistent with the objective measure than the 50 per cent reference level. This distinction is important when assessing whether a metric provides useful information for evaluating relative institutional performance.

Rank correlations and pairwise concordance measures are treated as descriptive statistics calculated for twenty institutions and 190 institution pairs. No sampling distribution is assumed for these measures, and no claims of statistical significance are made regarding small differences between them. The limitations associated with statistical inference from a single, small cross-sectional sample are therefore recognised throughout the analysis [3].

Adoption rates and readability lags are compiled by the authors on the basis of observed reporting practices and typical recruitment-cycle timing rather than being estimated from a dedicated survey.

ANALYSIS AND RESULTS

Table 2 reports the metrics on all four measures.

Table 2
Metrics, adoption, lag and diagnosticity²

Metric	Kind	Adoption	Months to read	Diagnosticity	Pairs ordered correctly
Impressions delivered	Level	95%	0	-0.465	33.2%
Website visits	Level	90%	0	-0.534	31.1%
Clicks	Level	85%	0	-0.535	31.1%
Social media followers	Level	80%	0	-0.395	37.4%
Applications received	Level	75%	3	-0.353	37.4%
Enquiries received	Level	70%	1	-0.275	40.5%
Applications per unit spend	Ratio	35%	3	0.878	82.6%
Enrolments attributed	Level	30%	7	-0.229	41.1%
Offer acceptance rate	Ratio	25%	6	-0.245	41.1%
Cost per enrolment	Ratio	15%	9	1.000	100.0%

Cost per enrolment is the objective and its last two columns are definitional (Figure 1).

² Author's development

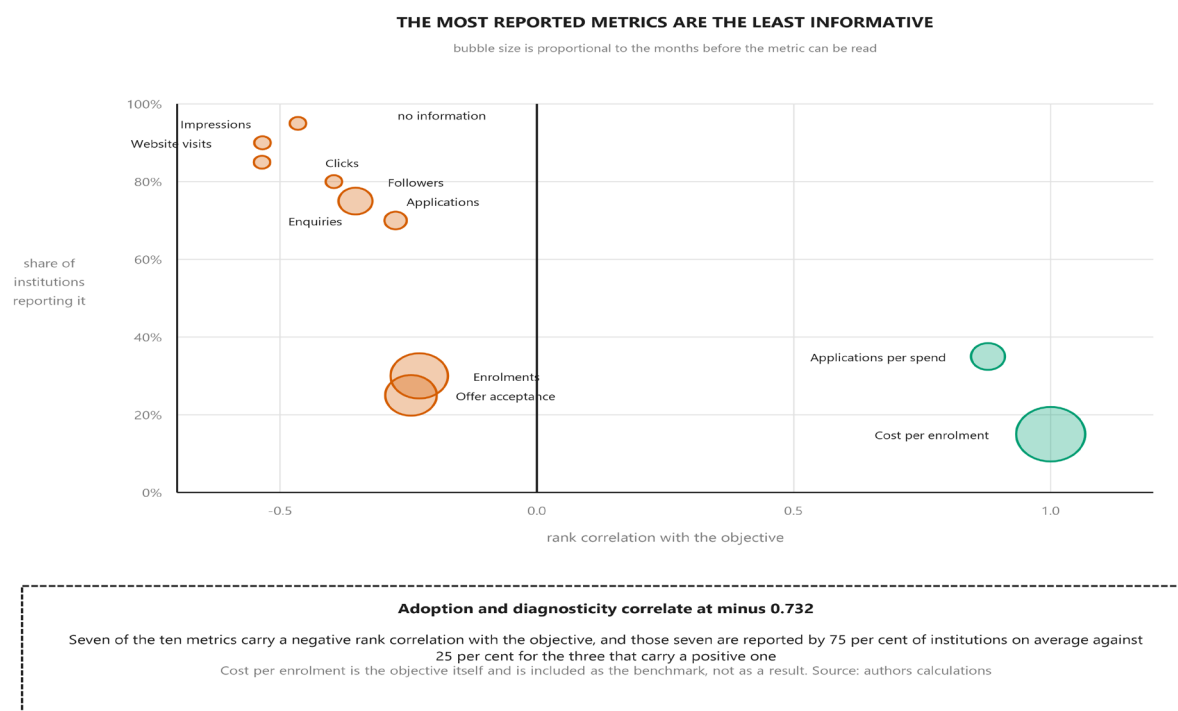


Figure 1. Adoption against diagnosticity. Bubble size is proportional to the months before a metric can be read³

The ordering of the table is by adoption, and it runs almost exactly counter to the ordering by diagnosticity. The four most widely reported metrics carry the four most negative rank correlations with the objective. The three metrics carrying positive or near-zero values are reported by 35, 25 and 15 per cent of institutions.

Adoption correlates with diagnosticity at minus 0.732 (Figure 2).

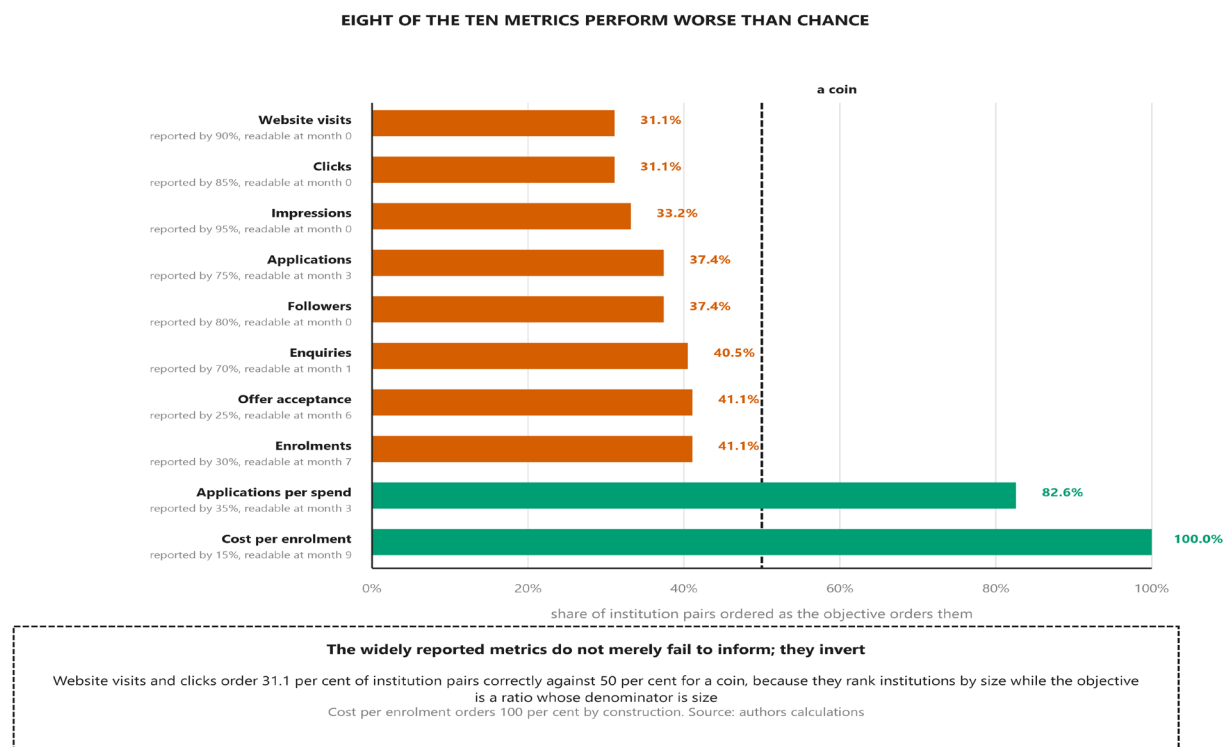


Figure 2. Share of institution pairs each metric orders as the objective does, against the 50 per cent benchmark⁴

³ Author's development

⁴ Author's development

Eight of the ten metrics produce pairwise orderings that are consistent with the objective in fewer than 50 per cent of institution pairs. Website visits and clicks each achieve a pairwise concordance of 31.1 per cent, followed by impressions at 33.2 per cent, followers and applications at 37.4 per cent, enquiries at 40.5 per cent, and offer acceptance and enrolments at 41.1 per cent. Among the metrics examined, only applications per unit spend, with a pairwise concordance of 82.6 per cent, and the objective measure itself exceed the 50 per cent reference level.

This pattern requires careful interpretation because part of the observed relationship follows from the mathematical construction of the measures. A level metric such as impressions tends to rank institutions partly according to the scale of their promotional expenditure: the rank correlation between promotional spending and impressions is 0.881. By contrast, the objective measure ranks institutions according to promotional spending divided by enrolments, with promotional spending appearing in the numerator of the ratio. The rank correlation between promotional spending and the objective ranking is -0.520 . The opposing direction of these associations helps explain why scale-related activity metrics may produce institutional rankings that differ substantially from the ranking generated by the cost-per-enrolment objective (Table 3).

Table 3
Level metrics against ratio metrics⁵

Kind	Metrics	Mean adoption	Mean diagnosticity
Level	7	75.0%	-0.398
Ratio	3	25.0%	0.544

The contrast is substantial, and the average pattern observed for ratio-based metrics conceals an important exception. The offer acceptance rate is itself a ratio, yet it has a diagnosticity of -0.245 and produces an ordering consistent with the objective for only 41.1 per cent of institution pairs. Its performance is therefore comparable to that of several level-based metrics examined in the analysis.

The relevant distinction is consequently not simply between level and ratio metrics, but also concerns the components used to construct the ratio. Applications per unit spend relates an outcome to the resource used to generate it, giving it a structure that is conceptually aligned with an efficiency-oriented objective. This metric achieves a diagnosticity of 0.878. By contrast, the offer acceptance rate relates one outcome to another and contains no explicit resource component. It therefore provides information about conversion between stages of the recruitment process rather than a direct measure of resource efficiency. For example, an institution may achieve a high offer acceptance rate even when the underlying pool of offers is relatively small or has required substantial promotional expenditure to generate.

The results therefore suggest that the diagnostic value of a ratio for evaluating efficiency depends not merely on its mathematical form but also on whether it relates an outcome to the resources used to generate that outcome. Within the metrics examined in this study, the contrast between applications per unit spend and the offer acceptance rate provides evidence supporting this distinction.

Adoption is strongly negatively correlated with readability lag ($r = -0.926$), and the absolute magnitude of this correlation is greater than that observed between adoption and diagnosticity ($r = -0.732$).

This pattern can be interpreted in relation to the timing with which different metrics become available. Impressions can be observed on the day a campaign is conducted, whereas cost per enrolment cannot be determined until the relevant enrolment outcome becomes observable, approximately nine months later. By that stage, planning and budgeting for the subsequent recruitment cycle may already have progressed substantially. Consequently, an institution required to assess a campaign at or near the time it ends has access to four immediately observable metrics in the present framework, all of which are level-based measures.

Readability lag is positively correlated with diagnosticity ($r = 0.619$). Within the metrics examined, measures that become available later therefore tend to exhibit greater correspondence with the efficiency-oriented objective. This creates an important timing trade-off for evaluation: metrics available early can support more immediate reporting, whereas some of the metrics more closely aligned with the final objective become observable only later in the recruitment cycle (Figure3).

5 Author's development

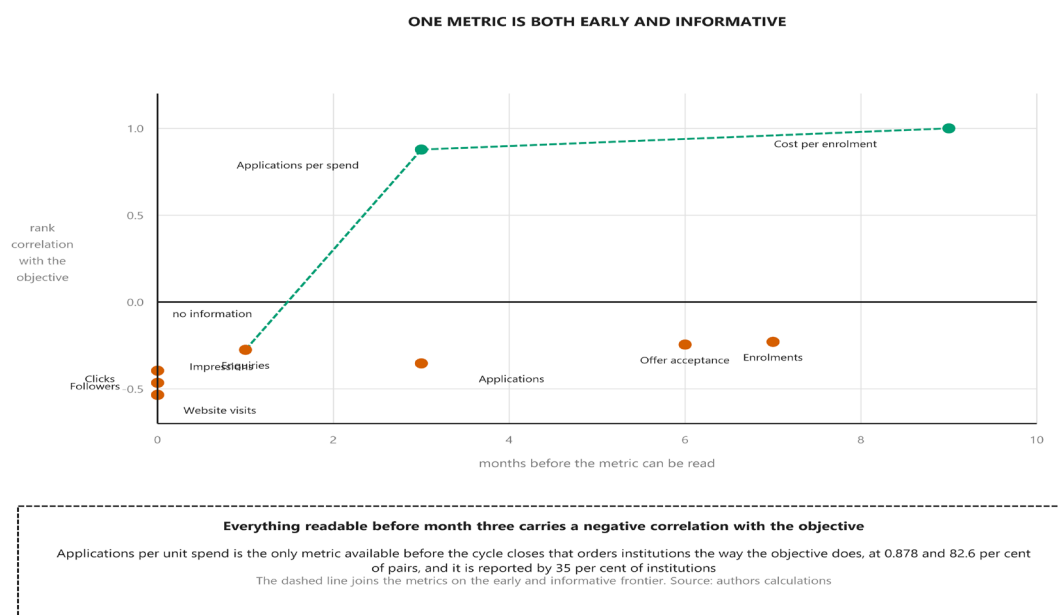


Figure 3. Diagnosticity against readability lag, with the early and informative frontier marked⁶

All metrics available before month three exhibit a negative rank correlation with the objective measure. At month three, two additional metrics become available, and their relationships with the objective differ substantially. The number of applications received has a rank correlation of -0.353 with the objective, whereas applications per unit spend has a rank correlation of 0.878 . Both metrics are derived from the same application count, but the latter additionally relates that outcome to the promotional resources expended.

Applications per unit spend correctly orders 82.6 per cent of institution pairs and becomes available six months before the objective measure. Despite its comparatively high diagnosticity and earlier availability, it is reported by 35 per cent of the institutions.

The analysis also examines whether combining this metric with an additional early indicator improves diagnostic performance. Applications per unit spend and the enquiry-to-application conversion rate were standardised and summed to construct a composite indicator. The resulting composite has a rank correlation of 0.719 with the objective and a pairwise concordance of 75.3 per cent. Both values are lower than those obtained using applications per unit spend alone. The enquiry-to-application conversion rate itself has a rank correlation of -0.093 with the objective, indicating limited correspondence with the objective measure in the present sample. Its inclusion in the composite therefore does not improve the diagnostic performance of the stronger individual indicator.

These findings suggest that the construction of composite indicators should be based on the demonstrated diagnostic contribution of their individual components rather than on the inclusion of multiple available measures by default. Within the present sample, combining a strongly diagnostic indicator with an indicator displaying limited correspondence with the objective reduces both rank correlation and pairwise concordance relative to the stronger indicator used independently. Accordingly, the results support a selective approach to metric combination in which additional indicators are incorporated when they provide demonstrable incremental diagnostic information (Figure 4).

6 Author's development

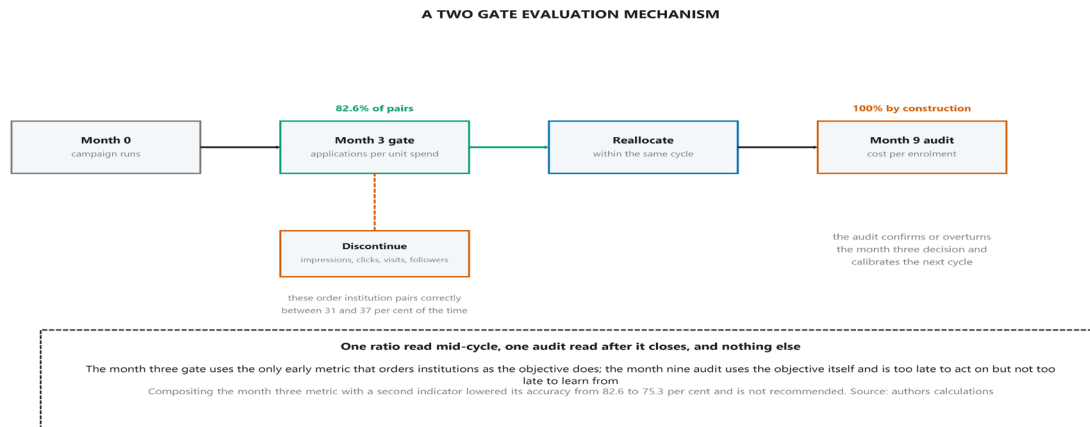


Figure 4. The proposed two-gate evaluation mechanism⁷

The proposed evaluation mechanism consists of two stages and relies on a deliberately restricted set of metrics.

The month-three decision point uses applications per unit spend. This metric orders 82.6 per cent of institution pairs consistently with the objective measure and becomes available while the recruitment cycle is still in progress. It can therefore provide information that may inform adjustments within the same cycle. Within the proposed mechanism, this represents the principal stage at which evaluation results can be used to support contemporaneous decisions.

The month-nine audit uses cost per enrolment. Its correspondence with the objective ranking is complete by definition. Although this measure becomes available after the period in which adjustments to the current recruitment cycle can readily be implemented, it remains relevant for subsequent evaluation. Specifically, it can be used to assess the month-three decision and to inform the calibration of promotional activities in the following cycle.

The remaining metrics are not incorporated into the proposed decision mechanism. This exclusion does not imply that impressions, clicks, website visits, or followers are measured inaccurately. Rather, within the present sample, these metrics order institution pairs consistently with the objective in approximately 31 to 37 per cent of comparisons. Assigning substantial decision weight to such metrics could therefore produce rankings that differ considerably from those generated by the stated objective measure.

The organisational requirements for implementing the mechanism are relatively limited and clearly defined. The month-three decision point requires applications to be recorded by source and promotional expenditure to be attributed to corresponding periods. Institutions may already collect these two types of information separately; the proposed mechanism requires them to be integrated for evaluation purposes. The month-nine audit requires realised enrolments to be linked to promotional expenditure for the corresponding recruitment cycle, thereby integrating enrolment records with expenditure data.

Taken together, the three constructs provide a coherent framework for understanding the observed pattern of marketing evaluation and for identifying potential improvements to the evaluation mechanism.

Institutions tend to report metrics that become available relatively quickly. Adoption is strongly negatively correlated with readability lag ($r = -0.926$), representing the strongest observed association among the relationships examined in this analysis. This finding is consistent with the interpretation that the timing of metric availability plays an important role in the observed pattern of metric adoption, without requiring assumptions about the quality of institutional judgement.

At the same time, the metrics available early in the recruitment cycle generally exhibit limited correspondence with the objective measure. Eight of the ten metrics examined produce pairwise ordering accuracy below the 50 per cent reference level. The results further indicate an important distinction between level metrics and efficiency-oriented ratios: level metrics tend to be associated with institutional scale, whereas an efficiency measure relates an outcome to the resources used to generate it.

The findings therefore support a selective rather than additive approach to metric use. Within the present sample, applications per unit spend provides substantial diagnostic information at month three. Adding the enquiry-to-application conversion rate does not improve its diagnostic performance; instead, pairwise concordance declines from 82.6 to 75.3 per cent. The proposed mechanism consequently prioritises the timing

⁷ Author's development

and diagnostic relevance of individual metrics rather than the number of metrics included.

CONCLUSION AND RECOMMENDATIONS

This article examined the metrics used to evaluate marketing promotion in higher education by assessing their ability to reproduce the ordering of twenty institutions generated by the stated objective measure. The analysis considered three dimensions: adoption, readability lag, and diagnosticity.

The results indicate that the most widely adopted metrics are not necessarily the most diagnostic. Website visits and clicks each have a rank correlation of -0.383 with the objective measure, while impressions have a correlation of -0.361 . These metrics are also strongly associated with promotional expenditure: the corresponding rank correlations with spending are 0.904 for website visits, 0.896 for clicks, and 0.881 for impressions. By contrast, the objective ranking is negatively correlated with promotional spending ($r = -0.520$).

The results also show that the distinction between level metrics and ratios is not sufficient on its own to determine diagnosticity. The offer acceptance rate, despite being expressed as a ratio, has a rank correlation of -0.245 with the objective measure. Within the metrics examined, the more relevant distinction concerns the construction of the ratio, particularly whether the outcome is related to the resources used to generate it.

Metric adoption is strongly negatively correlated with readability lag ($r = -0.926$), while readability lag is positively correlated with diagnosticity ($r = 0.619$). Taken together, these relationships indicate that metrics available later in the recruitment cycle tend to exhibit greater correspondence with the objective measure, whereas metrics available earlier tend to be more widely reported.

Among the metrics examined, applications per unit spend combines relatively early availability with comparatively high diagnosticity. At month three, it has a rank correlation of 0.878 with the objective and correctly orders 82.6 per cent of institution pairs. It therefore becomes available six months before the objective measure can be evaluated, although it is currently reported by only 35 per cent of the institutions in the sample.

Finally, combining applications per unit spend with the enquiry-to-application conversion rate does not improve diagnostic performance within the present sample. The enquiry-to-application conversion rate has a rank correlation of -0.093 with the objective when considered independently, and its inclusion in the composite reduces pairwise concordance from 82.6 to 75.3 per cent. This result supports the use of additional indicators when they provide incremental diagnostic information rather than the construction of composite measures solely to increase the number of dimensions represented.

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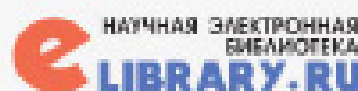
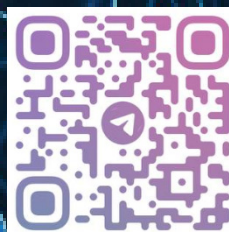
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