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Brand Capital Efficiency and Labour Productivity: Evidence from Publicly Listed Firms in East Africa

Mugambi Mwenda James *, Onyango James and Kongo O. Yabesh

Department of Economics, School of Business and Economics, Moi University, P.O. Box 3900-30100, Eldoret, Kenya

Abstract

Brand capital remains one of the least examined components of intellectual capital in African productivity research, where branding-related investments are commonly subsumed under the broader construct of relational capital. This study investigates the effect of brand capital efficiency on labour productivity among publicly listed firms in Kenya, Uganda, Tanzania, and Rwanda. The analysis draws on a balanced panel of 29 firms and 318 firm-year observations, with data sourced from audited financial statements covering the period 2013–2023. Brand capital efficiency was measured using the Modified Value-Added Intellectual Coefficient Model (MVAICM™), with advertising and marketing expenditure serving as the proxy for brand capital, while labour productivity was estimated from a value-added Cobb–Douglas production function within a Total Factor Productivity framework. Panel estimation using a fixed-effects model, selected through the Hausman specification test, shows that brand capital efficiency is positively and significantly associated with labour productivity ($\beta = 0.019$, $p < .001$), net of firm-level heterogeneity. Cross-country comparisons further show that firms in Rwanda and Tanzania exhibit the highest brand capital intensities despite comparatively lower labour productivity, suggesting that investments in branding do not translate uniformly into productivity gains across institutional and market environments. The findings position brand capital efficiency as a strategic intangible resource associated with firm-level productivity, plausibly operating through demand resilience, pricing power, and talent attraction and retention, though the fixed-effects design cannot fully rule out reverse causality between productivity and marketing spend. The study provides the first firm-level empirical evidence on the association between brand capital efficiency and labour productivity in East Africa, thereby extending the literature on intellectual capital and offering practical insights for corporate managers, investors, and policymakers.

Keywords: brand capital efficiency, labour productivity, intangible assets, advertising, MVAICM, East Africa, listed firms

Correspondence: *mwendamugambi@mu.ac.ke

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1. Introduction

Brand capital occupies a distinctive yet underexplored position within the intangible assets literature. Marketing scholars have studied it extensively as a driver of consumer behaviour, yet productivity research has been slower to treat it as a source of firm value, concentrating instead on research and development as the dominant form of intangible capital (Corrado et al., 2009). Market-facing intangibles, brand capital foremost among them, in fact account for a substantial share of firms' intangible wealth and productive capacity (Belo et al., 2014). Built through sustained investment in advertising, marketing and reputation-building activity, brand capital strengthens customer loyalty, narrows information asymmetry, supports price premiums and stabilises demand (Aaker, 1991; Hasan et al., 2022). Other forms of intangible capital have either received limited attention or been folded into broad measures of intellectual capital as a result of this imbalance, and the specific contribution of brand capital to firm productivity remains inadequately understood, particularly in developing economies (Crass & Peters, 2014).

That imbalance matters because brand capital's economic role differs from that of other intangible assets. Innovation capital enhances a firm's ability to create new products and processes; brand capital instead improves the commercialisation of those outputs by shaping consumer perception and purchasing behaviour. Firms with stronger brands generate higher sales volumes, command price premiums and reduce customer acquisition costs, all of which raise the value created from a given quantity of labour. Crass and Peters (2014) argue that the productivity effects of intangible assets depend on firm-level heterogeneity, since firms differ in their capacity to accumulate and deploy intangible resources efficiently, a point that favours firm-level analysis as the right setting for examining how individual components of intellectual capital contribute to productivity. Few studies, however, have isolated brand capital as a distinct productivity-enhancing resource, and fewer still have asked whether the efficiency with which firms use it shapes labour productivity.

East Africa gives the question empirical stakes, since labour productivity in the region has remained persistently low despite sustained economic growth: the African Centre for Economic Transformation ranks East African economies among the weakest

performers on labour productivity indicators (ACET, 2024), and World Bank (2023) estimates place purchasing power parity-adjusted GDP per hour worked at approximately USD 4.75 in Kenya, USD 3.53 in Uganda, USD 3.70 in Tanzania and USD 3.45 in Rwanda. At the same time, the region has grown increasingly service-oriented, digitally connected and consumer-driven (AfDB, 2020; UNCTAD, 2022), a shift that raises the stakes of market-based intangible assets for firm competitiveness. Empirical evidence linking brand capital to labour productivity in East Africa nonetheless remains scarce, and existing studies generally subsume branding activities within the broader concept of relational capital (Sheikh & Wepukhulu, 2019), which makes it difficult to isolate brand capital's independent productivity effects.

The present study examines the effect of Brand Capital Efficiency (BCE) on labour productivity among publicly listed firms in Kenya, Uganda, Tanzania and Rwanda over 2013–2023, responding directly to Crass and Peters' (2014) call to examine individual components of intellectual capital rather than treating intangible assets as a homogeneous construct. Brand capital is measured through an efficiency-based approach derived from the Modified Value-Added Intellectual Coefficient Model (MVAICM™), which evaluates how effectively brand-related investment is transformed into value added rather than simply measuring expenditure (Nimtrakoon, 2015; Pulic, 1998). Labour productivity is assessed using labour-specific Total Factor Productivity, which keeps the analysis focused on brand capital's operational contribution rather than on conventional accounting-based performance measures. The findings extend the limited empirical literature on intangible capital in developing economies by providing firm-level evidence on the role of brand capital efficiency in explaining labour productivity.

The remainder of the paper is organised as follows. Section 2 reviews the relevant literature and develops the study hypothesis. Section 3 describes the research methodology. Section 4 presents the empirical results, Section 5 discusses the findings, and Section 6 concludes the paper.

2. Literature Review

2.1. Theoretical Framework

The study draws on the Resource-Based View (RBV) and the Knowledge-Based View (KBV) of the firm. The RBV holds that sustained competitive advantage derives from resources that are valuable, rare, imperfectly imitable, and non-substitutable (Barney, 1991). Brand capital satisfies these criteria: it is built cumulatively over time through sustained marketing effort, is embedded in the cognitive and emotional frameworks of consumers, and is path-dependent and socially complex, making replication by rivals difficult (Aaker, 1991). The KBV extends the argument by conceptualizing the firm as a knowledge-integrating entity whose intangible, knowledge-based resources are the key drivers of sustainable productivity and growth (Grant, 1996). Within this framing, brand capital operates as market-facing organizational knowledge about customers, positioning, and reputation that lowers transaction costs, stabilizes demand, and permits premium pricing.

These external advantages translate into internal productivity through several mechanisms, operating at both the market and the workforce level. At the market level, stable demand permits smoother production planning and fuller capacity utilization, while pricing power raises value added per

worker directly. At the workforce level, the channels are more numerous. Employees, particularly those in customer-facing, marketing, and product roles, act as carriers of brand identity in their daily interactions with stakeholders; where branding investments produce a coherent and resonant identity, employees have a clearer framework for directing effort, which reduces ambiguity in day-to-day operations and lowers wasted labour input. Branding-related training and competencies also generate cross-functional spillovers for example, skills developed for customer relationship management or product design diffuse across departments consistent with neoclassical growth theory's emphasis on labour quality as a determinant of productivity growth (Owyang & Shell, 2018). Strong, well-managed brands additionally generate pride and identification among employees, encouraging discretionary effort and lowering agency costs (Willmott, 2010), while strong employer brands attract higher-quality talent and elevate morale (Rahman & Rahim, 2022).

Firms that deploy branding resources efficiently also tend to complement this with capital deepening investment in customer relationship management systems, data analytics, and digital platforms that raises the capital-to-labour ratio in branding-adjacent processes and thereby amplifies what each employee can produce (Owyang & Shell, 2018). Established reputations further reduce customer acquisition and negotiation costs, freeing resources for productive deployment (Belo et al., 2014). Brand capital efficiency, the value added generated per unit of brand-related expenditure should therefore be positively associated with labour productivity, not merely because efficient firms spend less, but because efficient branding sharpens the direction, motivation, and technological support of labour itself.

2.2. Empirical Literature

International evidence increasingly documents the firm-level payoffs of brand capital. Belo et al. (2014), in a seminal contribution, model brand capital as a productive asset accumulated through advertising and show that it carries a distinct risk premium and contributes to firm value in the United States. Chengcheng et al. (2026), using Chinese A-share listed companies from 2010 to 2022, find that brand capital development significantly improves corporate investment efficiency, with the effect strongest for firms with fewer financing constraints and better managerial abilities. Mustafa et al. (2023) show that brand capital reduces stock price crash risk among Iraqi listed banks, highlighting its informational role. Related work links brand capital to debt choice and financing conditions (Alam et al., 2024; Hasan et al., 2022) and to operational efficiency, employee motivation, and productivity via strengthened customer relationships and reduced information asymmetry (Aggarwal, 2020; Campanella et al., 2021; Lee & Kim, 2021).

A related strand of work cautions that omitting brand capital from productivity analysis is not merely an oversight but a source of measurement bias. Because branding inflates revenue through price premia rather than through additional physical output, productivity estimates that rely on revenue-based output measures can attribute to "efficiency" what is in fact a branding-induced pricing effect, overstating the operational performance of brand-intensive firms relative to their peers (He et al., 2019). This concern motivates the reliance in this study on a value-added, labour-specific TFP measure derived from

a production-function residual (Section 3.2.1) rather than an unadjusted revenue-productivity ratio, and it strengthens the case for treating brand capital efficiency as an explicit regressor rather than an unmeasured confound.

African evidence, while still fragmented, is accumulating steadily, most of it emerging from Kenya with a smaller body of work from neighbouring states. Sheikh and Wepukhulu (2019) found relational capital efficiency to be the strongest determinant of financial sustainability among Kenyan SACCOs, suggesting that firms which manage customer and stakeholder relationships efficiently perform better. In the mobile telecommunications sector, Chepkwony et al. (2018) show that brand loyalty, perceived quality, awareness, and association are each positively associated with financial performance among Nairobi-based operators, while Nganga (2023), studying firms listed on the Nairobi Securities Exchange, extends the finding to proprietary brand assets and links branding directly to investor confidence in capital markets. Alogo et al. (2024), examining restaurants in Kisumu, find that brand equity dimensions strongly predict non-financial outcomes such as customer satisfaction and market share, broadening the evidence base beyond purely financial performance. Chinomona and Sandada (2019) report that strong brand equity improves operational efficiency by stabilizing demand and enhancing customer loyalty, while Mutiso and Wanjiru (2022) demonstrate that branding investments in East African firms contribute to productivity by improving employee morale, strengthening customer relationships, and reducing customer acquisition costs. Karanja and Gathogo (2021) find that brand equity in Kenyan consumer-goods firms is associated with higher sales per employee, and Osei and Tetteh (2020) show that strong brands in Ghanaian firms facilitate smoother operations and better resource utilization. Evidence from Uganda tells a comparable story: Moses et al. (2024), studying Uganda Breweries, identify advertising expenditure, social media presence, product innovation, and sponsorship as determinants of sales and profitability, although product innovation did not translate into immediate productivity gains, pointing to a temporal lag between brand-related investment and realized outcomes; Agaba and Emenike (2019), focusing on alcoholic beverage producers in Kabale District, similarly confirm that brand awareness, loyalty, and perceived quality shape competitive advantage outside Uganda's main commercial centres. The relevance of branding extends beyond private enterprise: Anduku Yatundu et al. (2015) find that brand name and image significantly influenced the performance of public sugar firms in Western Kenya, indicating that branding capital matters even for state-owned enterprises competing in commodity markets.

Countervailing evidence exists: Agyapong and Boamah (2021) find that branding capital does not significantly influence productivity in small firms with limited market reach, and Nyarko and Asare (2020) report that in micro-enterprises branding efforts often raise costs without commensurate gains suggesting the productivity benefits of branding may require scale and established market presence, conditions met by the listed firms studied here. Taken together, these studies converge on a shared conclusion that brand capital shapes firm performance across the region, even as none directly examines its efficiency in relation to labour productivity, the gap this study addresses.

2.3. Hypothesis Development

The RBV and KBV predict, and international evidence largely confirms, that efficiently deployed brand capital enhances firm performance through demand stabilization, pricing power, talent attraction, and reduced transaction costs. Because direct evidence on brand capital efficiency and labour productivity is absent for East Africa, the study tested the following hypotheses:

H_{01}: *Brand capital efficiency has no significant effect on labour productivity among publicly listed firms in East Africa.*

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3. Methodology

3.1. Research Design, Population, and Data

A quantitative, longitudinal correlational design grounded in the positivist paradigm was adopted (Creswell & Creswell, 2018). The target population comprised the 120 companies listed on East African Community securities exchanges; Kenya, Uganda, Tanzania, and Rwanda were selected for their advanced economic integration and fully functioning exchanges the Nairobi Securities Exchange, Uganda Securities Exchange, Dar es Salaam Stock Exchange, and Rwanda Stock Exchange whose regulations mandate publication of audited financial statements (Duho, 2022). Only firms continuously listed and operational throughout 2013–2023 were included, and cross-listed firms were assigned to their headquarters exchange to avoid duplication. Data on marketing and advertising expenditure, employee costs, innovation-related expenditure, assets, liabilities, employment, and turnover were extracted from integrated annual reports, harmonized in a standardized template, and cleaned for outliers and missing values, yielding a balanced panel of 29 firms and 318 firm-year observations. Continuous variables were log-transformed, and the panel was structured in long format for estimation in Stata.

3.2. Measurement of Variables

3.2.1. Labour Productivity

Labour productivity was measured as labour-specific Total Factor Productivity derived from a value-added Cobb–Douglas production function (Solow, 1957; Syverson, 2011). Value added (proxied by turnover) is produced by labour (number of employees, excluding R&D staff) and physical capital (net fixed assets), with TFP assumed Hicks-neutral. Following the two-step approach of Dettori et al. (2012) and Crass and Peters (2014), the log-linearized function was rearranged under constant returns to scale so that labour-specific TFP was recovered as the residual of the labour productivity equation, $va_{it} - l_{it} = \beta_o + \beta_k(k_{it} - l_{it}) + \mu_{it} + \varepsilon_{it}$. The value-added formulation isolates efficiency in the use of primary factors and avoids contamination by materials intensity and input price distortions (Ackerberg et al., 2015; Basu & Fernald, 1997).

Where simultaneity between input choices and unobserved productivity shocks is a concern for such residual-based estimates, proxy-variable techniques originating with Levinsohn and Petrin (2003) offer an alternative identification strategy to fixed-effects estimation; the present study relies on the latter (Section 3.3), consistent with its emphasis on purging time-invariant firm heterogeneity rather than instrumenting for simultaneity directly.

3.2.2. Brand Capital Efficiency and the MVAICM Framework

Consistent with the dominant empirical practice, advertising and marketing expenditures served as the proxy for brand capital, interpreted as the annual investment through which firms build brand awareness and perception (Alam et al., 2024; Belo et al., 2014; Hasan et al., 2022; Ismail et al., 2021). This expenditure-based logic traces to Corrado, Hulten, and Sichel (2005), who first proposed treating advertising outlays as investment in intangible capital rather than as a current cost. A distinct strand of this literature, following Belo et al. (2014), capitalises advertising into a depreciated stock via the perpetual inventory method; the present study instead follows the efficiency-ratio tradition of the VAIC/MVAIC literature (Nimtrakoon, 2015; Pulic, 1998), which relates value added to current-period expenditure rather than to an accumulated stock. This choice is deliberate rather than incidental: it treats brand capital as an efficiency of conversion, how much value added a firm extracts from each unit spent on branding in a given year, rather than as an accumulated asset, and the two constructs answer different questions.

The flow-based measure used here says nothing about the productivity contribution of brand capital accumulated in prior years, a limitation acknowledged in Section 6. Expenses such as advertising, market research, strategy design, and establishment of new distribution channels are representative of brand capital (Crass & Peters, 2014); direct sales and distribution costs were excluded. Brand capital efficiency was computed within the Modified Value-Added Intellectual Coefficient Model (MVAICM™), which extends Pulic's (1998) VAICM™ in response to criticisms that the original captures only human and structural capital (Nimtrakoon, 2015; Ståhle et al., 2011). Modified value added was defined as VA_m = OP + D + A + EC + ME + R&D + OI (operating profit, depreciation, amortization, employee costs, marketing expenses, R&D, and other innovative costs), and brand capital efficiency as $BCE_m = VA_m/ME$. Companion efficiencies for human capital (VA_m/HC), innovation capital ($VA_m/R\&D$), organizational capital ($(VA_m - HC - R\&D - ME)/VA_m$), and capital employed (VA_m/CE) entered the model so that the estimated brand effect is net of other intellectual capital components (Odat & Bsoul, 2022). Because all five efficiency ratios share VA_m in the numerator, they are not constructed independently of one another, a structural feature of the VAIC family that Ståhle et al. (2011) identify as a source of mechanical correlation among components; Section 4.2 returns to this concern when interpreting the study's variance inflation diagnostics.

3.2.3. Control Variables

Firm size (natural logarithm of total assets) was controlled because scale shapes productivity through economies of scale, technology adoption, and managerial capacity (Melitz, 2003; Syverson, 2011). Firm leverage (total liabilities to total assets) was controlled because debt commitments can constrain productivity-enhancing expenditure, with firm-level evidence documenting a negative leverage–productivity association (Avarmaa et al., 2013; Myers, 1977).

3.3. Model Specification and Estimation

The estimating equation was

$$TFP_{it} = \beta_0 + \beta_1 BCE_{it} + \beta_2 HCE_{it} + \beta_3 ICE_{it} + \beta_4 OCE_{it} + \beta_5 CEE_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \mu_i + \varepsilon_{it},$$

where BCE, HCE, ICE, OCE, and CEE denote, respectively, brand capital, human capital, innovation capital, organizational capital, and capital-

employed efficiency (Section 3.2.2), and SIZE and LEV are the firm-level controls defined in Section 3.2.3.

Random-effects and fixed-effects estimators were fitted and compared through the Hausman (1978) specification test. The fixed-effects estimator was preferred because unobserved, time-invariant firm characteristics such as managerial capability, organizational culture, brand heritage are plausibly correlated with the regressors; it purges all time-invariant heterogeneity so that estimates reflect within-firm variation over time. Pre-estimation diagnostics included Fisher-type augmented Dickey–Fuller (ADF) panel unit-root tests, Shapiro–Wilk and skewness–kurtosis tests for normality, variance inflation factors (VIFs) for multicollinearity, the Breusch–Pagan/Cook–Weisberg test for heteroskedasticity, and the Ramsey RESET test for functional-form misspecification. These tests were used to assess relevant properties of the data and model; their results were interpreted in conjunction with the assumptions and limitations of panel estimation.

Although firm fixed effects account for time-invariant unobserved heterogeneity, they do not, by themselves, establish a causal relationship between brand capital efficiency and labour productivity. More productive firms may have greater financial capacity to invest in branding or may manage marketing expenditure more efficiently, creating the possibility of reverse causality. Belo et al. (2014) also examine the relationship between brand capital and firm value in a framework that recognises the economic significance of brand investment. Accordingly, the estimated coefficient on brand capital efficiency is interpreted as a within-firm association conditional on the included variables and firm-specific effects, rather than as an unambiguously causal effect.

The specification also raises the question of whether year fixed effects should be included to account for common time-varying shocks affecting firms during the 2013–2023 study period, including macroeconomic fluctuations, exchange-rate movements, and the COVID-19 disruption. Where not already included in the estimation, year indicators should be considered in a robustness specification. In addition, serial correlation within firms and cross-sectional dependence among firms exposed to common economic conditions may affect statistical inference. These issues should be assessed using appropriate panel-data diagnostics. Standard errors should be calculated using an estimator appropriate to the panel structure, with firm-clustered standard errors considered to account for within-firm dependence. Alternative methods, such as Driscoll–Kraay standard errors, may also be considered where their assumptions are appropriate to the sample dimensions and dependence structure. The final specification and reported inference should reflect the procedures actually implemented and verified using the statistical output.

4. Results

4.1. Descriptive Statistics

Table 1 reports descriptive statistics. Brand capital efficiency records the highest mean among the ratio-based intellectual capital components (M = 6.571, SD = 1.090), indicating that East African listed firms extract comparatively high value added per unit of brand-related expenditure, with meaningful cross-firm dispersion. Labour productivity averages 7.427 (SD = 1.524), and leverage exhibits wide variation (M = 0.588, SD = 0.643).

Table 1. Descriptive statistics (*N = 318 firm-year observations*)

Variable	Obs	Mean	SD	Min	Max
Labour Productivity	318	7.427	1.524	3.570	10.792
Firm Leverage	318	0.588	0.643	0.046	7.156
Firm Size	318	6.926	0.831	4.701	8.707
Brand Capital Efficiency	318	6.571	1.090	3.795	9.953

Source: Authors' computations from audited financial statements (2013–2023).

Cross-country comparison (Table 2) reveals a striking pattern: Rwanda records the highest mean brand capital (M = 7.870), followed by Tanzania (M = 7.262), Uganda (M = 6.699), and Kenya (M = 5.855), even though Rwanda and Tanzania display the lowest labour efficiency. This suggests that firms in these countries rely comparatively heavily on market positioning and reputational assets rather than labour scale or innovation intensity, whereas Kenya and Uganda combine stronger labour efficiency with more balanced intangible portfolios.

Table 2. Brand capital and labour Productivity by country

Variable	Kenya	Rwanda	Tanzania	Uganda
Labour Productivity	7.698	5.251	5.975	8.609
Brand Capital Efficiency	5.855	7.870	7.262	6.699
Firm Leverage	0.497	0.704	0.580	0.546
Firm Size	6.893	6.981	7.009	6.907

Note. Country-level means over 2013–2023. Source: Authors' computations.

4.2. Diagnostic Tests

Fisher-type ADF panel unit-root tests rejected the unit-root null for all variables (for brand capital efficiency, inverse $\chi^2(58) = 157.945$, $p < .001$; inverse normal $Z = -2.716$, $p = .003$), confirming stationarity in levels. Multicollinearity was absent (BCE VIF = 1.027; mean VIF = 1.524). Shapiro–Wilk tests supported normality (brand capital efficiency $W = 0.996$, $p = .524$; labour productivity $W = 0.980$, $p = .634$), the Breusch–Pagan/Cook–Weisberg test detected no heteroskedasticity ($\chi^2(1) = 2.92$, $p = .088$), and the Ramsey RESET test indicated no misspecification ($F(3, 308) = 1.99$, $p = .115$). Because the five intellectual-capital efficiency ratios share VA_m in the numerator (Section 3.2.2), the low VIFs reported here are best read as evidence that the shared-numerator structure does not manifest as material multicollinearity in this sample, rather than as a general defence of the VAIC family against the mechanical-correlation critique raised by Ståhle et al. (2011).

4.3. Correlation Analysis

Pairwise Pearson correlations are reported in Table 3. Brand capital efficiency correlates positively and significantly with labour productivity ($r = .422$), clearly indicative of a complementary role for market-facing assets. Brand capital efficiency is also positively correlated with firm size ($r = .363$), consistent with the view that branding advantages accrue disproportionately to larger, more capability-rich firms.

Table 3. Pairwise correlations

Variable	(1)	(2)	(3)	(4)
(1) Labour Productivity	1.000			
(2) Firm Leverage	−0.156*	1.000		
(3) Firm Size	0.661*	−0.200*	1.000	
(4) Brand Capital Efficiency	0.422*	0.320*	0.363*	1.000

Source: Authors' computations.

4.4. Model Selection and Regression Results

The Hausman test rejected the random-effects specification ($\chi^2(6) = 145.11$, $p < .001$), confirming the fixed-effects model as the consistent estimator. Table 3 presents the fixed-effects results. The model is highly significant ($F(6, 283) = 80.91$, $p < .001$) with a within-firm R^2 of 0.632.

Table 4. Fixed-effects regression of labour productivity on intellectual capital efficiency components

Variable	Coef.	SE	t	p	95% CI
Firm Leverage	−0.021	0.014	−1.53	.126	[−0.048, 0.006]
Firm Size	0.080	0.002	5.09	<.001	[0.005, 0.011]
Brand Capital Efficiency	0.019	0.003	7.28	<.001	[0.014, 0.024]
Labour Productivity	0.586	0.014	42.29	<.001	[0.559, 0.613]

Note. N = 318; groups = 29; R^2 within = 0.632, between = 0.824, overall = 0.808; $F(6, 283) = 80.91$, $p < .001$. Dependent variable: labour-specific total factor productivity.
Source: Authors' computations.

Brand capital efficiency is positively and significantly associated with labour productivity ($\beta = 0.019$, $t = 7.28$, $p < .001$). The null hypothesis H_{o1} is therefore rejected: improvements in the efficiency with which firms convert brand-related expenditure into value added are associated with measurable within-firm gains in labour productivity, net of the other intellectual capital components and controls. Firm size is positive and significant, while leverage is negative but insignificant in the within-firm specification. Consistent with Section 3.3, this association should be read as a within-firm correlation robust to time-invariant confounds rather than as a fully identified causal effect, given the reverse-causality channel discussed above.

Discussion

The finding that brand capital efficiency is positively associated with labour productivity is consistent with the idea that firms which convert brand-related expenditure such as advertising, market reputation, customer loyalty, and brand equity into value added more efficiently also achieve higher labour productivity. Brand capital plausibly contributes to the strategic management of market perceptions, the stabilization of demand, and the mitigation of uncertainty in competitive environments; when brand-related investments are efficiently deployed, firms may gain improved market positioning, enhanced pricing power, and increased customer retention, with these external advantages realized internally through more efficient

resource allocation and higher value added per worker. The dataset does not allow these channels such as demand stabilization, pricing power, talent attraction, and workforce motivation to be separately identified, so the discussion that follows should be read as an account of plausible mechanisms consistent with the theoretical framework in Section 2.1, not as evidence that any one channel dominates.

The result is consistent with recent studies highlighting the internal performance consequences of brand strength. Chinomona and Sandada (2019) found that strong brand equity improves operational efficiency by stabilizing demand and enhancing customer loyalty; Mutiso and Wanjiru (2022) demonstrated that branding investments in East African firms improve employee morale and reduce customer acquisition costs; and Karanja and Gathogo (2021) linked brand equity to higher sales per employee in Kenyan consumer-goods firms. It also aligns with the international literature treating brand capital as a productive asset (Belo et al., 2014) that improves investment efficiency (Chengcheng et al., 2026), reduces information asymmetry and crash risk (Mustafa et al., 2023), and boosts employee engagement and discretionary effort through employer branding (Rahman & Rahim, 2022). Indirect channels premium pricing, talent attraction, and favourable supplier terms (Lee & Kim, 2021) plausibly reinforce the direct demand-side effects.

The magnitude and robustness of the effect are also consistent with the theoretical mechanisms outlined in Section 2.1. If brand capital functions partly as reputational collateral (Klein & Leffler, 1981), firms with higher brand capital efficiency have more to lose from quality lapses or workforce disengagement, which plausibly reinforces the internal discipline and coordination reflected in higher labour productivity. The finding also lends indirect support to the concern that unadjusted productivity measures overstate the operational performance of brand-intensive firms (He et al., 2019): because this study isolates a value-added, labour-specific TFP measure and enters brand capital efficiency as an explicit regressor rather than leaving it as an unmeasured confound, the estimated coefficient is less likely to be a mechanical artifact of price-premium-inflated revenue than would be the case under a revenue-based productivity measure, though it remains subject to the reverse-causality caveat noted in Section 3.3.

The contrary evidence that branding fails to pay off in small and micro enterprises (Agyapong & Boamah, 2021; Nyarko & Asare, 2020) is not inconsistent with these results; rather, it delimits their scope. The firms studied here are listed companies with established market presence and sufficient scale to leverage brand-related advantages. The cross-country descriptive patterns in Table 2 add a further, more tentative layer of nuance: Rwandan and Tanzanian firms record the region's highest brand capital intensities alongside the lowest labour productivity, a pattern consistent with the possibility that efficiency of deployment matters more than the scale of branding investment. Because the pooled fixed-effects specification does not include a BCE × country interaction term, this pattern is descriptive rather than a formally tested moderation effect, and it is offered here as a direction for future work (Section 6) rather than as a finding of the present model. Within the East African context of intensifying competition and evolving consumer preferences, efficiently deployed brand capital nonetheless emerges as an association with productivity that the

existing regional literature has not previously documented at the firm level.

6. Conclusions, Implications, and Limitations

This study determined the effect of brand capital efficiency on labour productivity among publicly listed firms in four East African economies over 2013–2023, using an MVAICM™ based efficiency measure and a labour-specific TFP outcome within a fixed-effects panel framework. Brand capital efficiency was found to exert a positive and statistically significant effect on labour productivity, establishing brand capital as a significant determinant of productivity performance and strengthening the argument that intangible assets encompass market-facing capabilities beyond human capital and innovation that shape firm competitiveness.

Theoretically, the study extends the RBV and KBV by demonstrating that market-facing intangibles operate as productive resources in an emerging-market setting, and it contributes the first direct East African evidence on brand capital efficiency as a discrete construct.

Managerially, the findings imply that marketing capabilities and brand management should be treated as integral components of productivity strategy rather than discretionary promotional spending: firms that strategically invest in brand development and deploy brand-related resources efficiently are more likely to achieve productivity gains. For investors, brand capital efficiency offers a fundamentals-based signal of value creation that conventional accounting measures obscure, given that advertising is expensed rather than capitalized under prevailing standards. For policymakers, the results support enhanced disclosure of intangible investments under IAS 38 and related frameworks, so that the role of brand capital in value creation is visible to markets and regulators.

Limitations qualify these conclusions. Advertising expenditure, while the standard proxy, does not exhaustively capture brand-building activity customer service quality, product consistency, partnerships, and user-generated content also build brands but rarely appear in advertising budgets (Belo et al., 2014). The efficiency-ratio construct used here (Section 3.2.2) measures brand capital as a current-period flow rather than an accumulated, depreciated stock; it therefore cannot speak to the productivity contribution of brand investment made in prior years, a question a perpetual-inventory stock measure would be better suited to answer. The sample of listed firms limits generalization to smaller and informal enterprises, where the branding–productivity link may be weaker or negative, and the requirement of continuous listing throughout 2013–2023 excludes firms that delisted, failed, or were acquired during the period, which may bias the sample toward more resilient, and plausibly more productive, survivors.

The specification also omits year fixed effects, so common time shocks within the sample period including the COVID-19 disruption are not fully netted out, and the reported diagnostics do not test for serial correlation or cross-sectional dependence across firms sharing a country-year, both material considerations for a panel of this structure (Section 3.3). Sector effects are absorbed only insofar as they are time-invariant within a firm; time-varying, sector-specific shocks are not separately controlled for. Finally, while the fixed-effects design purges time-invariant firm heterogeneity, it does not resolve potential reverse causality between productivity and marketing spend (Section 3.3); the

reported association should accordingly be read as a robust within-firm correlation rather than a fully identified causal effect. Future research could employ perpetual-inventory brand stock measures with explicit depreciation schedules, apply instrumental-variable or dynamic panel (system-GMM) methods to address simultaneity, estimate the model with year fixed effects and cluster-robust or Driscoll–Kraay standard errors, formally test BCE × country interactions rather than relying on descriptive cross-country comparisons, examine sectoral heterogeneity (consumer goods versus industrials versus financial services), test for complementarities between brand and other forms of intellectual capital such as human capital, and extend the analysis to unlisted firms and additional African markets.

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