ACTIVITY-BASED COSTING FOR MARKETING COST ALLOCATION: A DRIVER OF MARKET PENETRATION STRATEGY IN YOGYAKARTA'S BATIK SMALL AND MEDIUM ENTERPRISES

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Abstract

This study aims to examine the effect of Activity-Based Costing (ABC)-based marketing cost allocation on the market penetration strategy of batik small and medium enterprises (SMEs) in Yogyakarta, a research relationship that has received little empirical attention despite the growing pressure these enterprises face from cheaper imported batik-motif textiles. This study uses a quantitative approach, employing simple linear regression analysis to examine the relationship between the two variables. The population comprised 100 batik business actors in Yogyakarta, and a sample of 80 respondents was determined using the Slovin formula and analyzed with IBM SPSS. The results show that ABC-based marketing cost has a positive and significant effect on market penetration strategy ($t = 8.305$; sig. = 0.000), with an R^2 of 0.469, meaning ABC-based marketing cost explains 46.9% of the variation in market penetration strategy, while the remaining 53.1% is explained by factors outside the model. Therefore, batik business actors and policymakers in the creative-economy sector need to adopt activity-based cost allocation as a strategic tool, not merely an accounting exercise, to design more targeted and cost-efficient market penetration efforts. This study contributes originality by shifting the application of ABC from its conventional focus on production/product costing toward the marketing-cost domain, and by situating this relationship within Indonesia's batik creative industry, a context that remains largely absent from the management-accounting literature.

Keywords: Activity-Based Costing, Batik SMEs, Market Penetration Strategy, Marketing Cost, Yogyakarta

INTRODUCTION

The batik industry in Yogyakarta is one of the pillars of Indonesia's national creative economy, carrying substantial historical, cultural, and economic value (Kementerian Perindustrian Republik Indonesia, 2023). Beyond its economic contribution, batik was recognized by UNESCO as an Intangible Cultural Heritage in 2009, cementing its status as part of the nation's cultural identity on the world stage. Despite this significance, the industry today operates under mounting competitive pressure, particularly from imported batik-motif textile products originating from China, which are typically sold far below the price of authentic hand-drawn batik made by local artisans (Azizah & Purnamasari, 2023).

Data from the Indonesian Textile Association (2023) show that textile imports from China account for 54.3% of Indonesia's total textile imports, with the volume continuing to increase every year, while national statistics indicate that the manufacturing sector, including textiles and garments, experienced slowing growth to 4.88% in 2023 (Badan Pusat Statistik, 2023). Fadillah and Andriyani (2024) argue that this trend reflects the real pressure faced by the domestic textile industry in defending its position both locally and internationally, making cost efficiency and effective marketing strategy essential survival tools for batik SMEs.

Facing such intense competition, companies are required not only to increase sales but also to strengthen their ability to control costs, particularly marketing costs, since accurate cost information is essential for management as a basis for pricing, product development, and market penetration decisions. Horngren, Datar, and Rajan (2020) note that traditional costing methods applied to firms with diverse products and activities tend to produce inaccurate cost information because costs are allocated using broad averaging rather than actual resource consumption. In practice, many batik enterprises in Yogyakarta still rely on traditional cost-accounting systems that allocate overhead costs generally, without considering which activities actually consume company resources, a condition that can create cost distortion — overcosting, which makes prices uncompetitive, or undercosting, which produces insufficient profit margins (Nasution, Prasetyo, & Komalasari, 2021).

In the context of batik marketing, inaccurate cost allocation directly affects management decisions related to marketing strategy and market penetration. Market penetration strategy refers to a company's effort to increase market share through intensified marketing, promotion, distribution, and competitive-pricing activities. Abdullah et al. (2023) emphasize that an appropriate marketing strategy plays a crucial role in ensuring optimal market penetration, making sound marketing-cost management the foundation for such a strategy to succeed. Activity-Based Costing (ABC) is considered more capable of producing accurate cost information than traditional methods, since it allocates overhead based on the activities that actually consume resources, enabling firms to identify which activities add value and which are inefficient (Kaplan & Cooper, 2022).

A number of studies confirm that ABC produces more detailed and accurate cost calculations than conventional methods across various small and medium enterprises, including batik producers (Mulyani & Fitriyah, 2021; Amitha & Firmansyah, 2021; Baviga & Amriana, 2023), and that ABC implementation in micro, small, and medium enterprises helps identify previously undetected cost waste, thereby improving operational efficiency and market competitiveness (Efendi et al., 2023). However, nearly all of this evidence concerns ABC's role in determining the cost of goods manufactured or cost of production,

not marketing cost, and almost none of it is situated within a creative-economy, artisan-based sector such as batik.

This points to a clear research gap. First, prior ABC studies have overwhelmingly examined production or manufacturing-cost contexts, leaving the marketing-cost dimension of ABC — which governs how firms allocate spending on promotion, distribution, and customer engagement — largely unexamined. Second, studies linking ABC directly to market penetration strategy as an outcome are scarce; most ABC research stops at cost-accuracy or pricing outcomes without tracing the strategic marketing consequence of that accuracy. Third, the batik SME sector of Yogyakarta, despite its economic and cultural importance and its acute exposure to import competition, has received little attention in the management-accounting literature relative to manufacturing or service firms studied elsewhere (Mousa, Nosratabadi, Sagi, & Mosavi, 2021).

This study addresses that gap and offers originality in three respects. First, it extends the application of ABC from its conventional focus on production costing into the marketing-cost domain, treating marketing cost allocation itself as the object of activity-based analysis. Second, it empirically tests the link between ABC-based marketing cost and market penetration strategy, an outcome variable seldom paired with ABC in the existing literature. Third, it situates this relationship within Indonesia's batik creative industry in Yogyakarta, a sector that is both culturally significant and competitively threatened, yet remains empirically underexplored. By filling this gap, the study aims to provide both a theoretical contribution to management-accounting literature on ABC and a practical basis for batik business actors to design more cost-efficient market penetration strategies amid tightening import competition.

REVIEW OF LITERATURE

Market penetration strategy is an approach used by a company to strengthen and expand its control over an existing market without necessarily launching new products (Kotler, 2020). In Ansoff's (2021) product-market growth framework, market penetration is the least risky growth strategy because it builds on products and markets the firm already understands. Kotler and Keller (2021) identify several indicators of successful market penetration strategy: the intensity of product promotion, the expansion of distribution networks, growth in product sales, growth in market share, and the ability to attract new consumers. Muhammadin et al. (2020) confirm that consistent, well-targeted marketing strategy has a positive effect on overall organizational performance and strengthens firms' competitiveness in dynamic markets.

Marketing cost can be understood as the entirety of expenditure a company allocates to support the marketing of its products, including distribution cost, market research, customer service, and sales-force operations. Mousa et al. (2021) view marketing cost not merely as an operational burden but as a strategic investment intended to increase overall firm value, while Kotler and Keller (2021) identify promotion cost, distribution cost, advertising cost, customer-service cost, and sales-force cost as its principal indicators.

Activity-Based Costing (ABC) is a costing approach that allocates expenses based on the actual activities occurring within company operations, rather than a single broad allocation base as in traditional costing. Anton (2022) defines ABC as a costing method that places activity as the primary object of the allocation process, producing cost information

that more accurately reflects real operating conditions. Hasanah and Saleh (2022) identify five indicators reflecting ABC implementation: the identification of company activities, the determination of cost drivers, the grouping of activity costs, the charging of costs based on activity, and the accuracy of cost allocation.

Several empirical studies illustrate the benefits of ABC for cost accuracy. Mulyani and Fitriyah (2021) found that ABC produces more detailed and accurate cost calculations for determining cost of goods manufactured than conventional methods. Amitha and Firmansyah (2021) demonstrated that ABC implementation at a batik enterprise in Pamekasan produced significantly different and more accurate cost-of-production figures than the traditional method previously used, while Baviga and Amriana (2023) showed that ABC analysis provides a cost picture more relevant to the actual cost drivers occurring in the field.

Beyond production costing, Hasanah and Saleh (2022) showed that ABC helps firms determine pricing and marketing strategy more precisely, and Efendi et al. (2023) found that ABC implementation in MSMEs uncovers previously undetected cost waste that would otherwise erode marketing effectiveness. Nguyen and Nguyen (2021) similarly found that ABC adoption improves the quality of cost information and thereby supports the effectiveness of firms' strategic decision-making, while Ahmad and Zabri (2022) showed that modern management-accounting practices, including ABC, contribute positively to marketing performance and firms' ability to sustain competitive advantage in dynamic markets.

Taken together, these studies consistently show that ABC improves the accuracy of cost information and supports firms' pricing and marketing decisions. However, as noted in the introduction, research directly linking ABC-based marketing cost — as opposed to production cost — to market penetration strategy remains scarce, and virtually absent within the batik creative-industry context. According to Hansen and Mowen (2020), the implementation of Activity-Based Costing improves the precision of cost information, enabling firms to exercise more effective cost control and decision-making; and because market penetration strategy is carried out through the intensification of marketing activities to expand market share (Kotler & Keller, 2021), it follows that the more accurately a firm identifies and allocates costs to the marketing activities that consume resources, the more effectively it can direct those resources toward activities that expand market reach. This reasoning provides the theoretical basis for the hypothesis tested in this study.

RESEARCH METHOD

This research implements a quantitative approach with the survey method as the main instrument of data collection, referring to the positivistic paradigm in social research that allows objective and measurable analysis of variables (Sugiyono, 2022). The study population comprised 100 people involved in marketing activities, marketing-cost management, and marketing decision-making within batik enterprises operating in the Special Region of Yogyakarta, covering Yogyakarta City, Bantul Regency, and Kulon Progo Regency. The sample size was determined using the Slovin formula with a 5% margin of error, $n = N / (1 + N.e^2)$, which yielded a sample of 80 respondents, selected through purposive sampling based on their direct involvement in marketing-cost decisions.

The data collection instrument used a structured questionnaire with a five-point Likert scale (1 = strongly disagree to 5 = strongly agree), covering two variables: ABC-based marketing cost (measured through the identification of activities, determination of cost drivers, grouping of activity costs, charging of costs based on activity, and accuracy of cost allocation) and market penetration strategy (measured through the intensity of product promotion, expansion of distribution networks, growth in product sales, growth in market share, and the ability to attract new consumers). Validity was assessed by comparing each item's calculated r-value with the r-table value at a 5% significance level (df = n – 2 = 78; r-table = 0.220), and reliability was assessed using Cronbach's Alpha, with a threshold of 0.60 as the minimum acceptable indicator of internal consistency (Roswirman & Elazhari, 2022). All items for both variables were found valid and reliable, with Cronbach's Alpha of 0.847 for ABC-based marketing cost and 0.831 for market penetration strategy.

Data analysis uses simple linear regression to test the research hypothesis regarding the effect of ABC-based marketing cost on market penetration strategy. Prior to the regression analysis, classical assumption tests were carried out, including the Kolmogorov-Smirnov test for normality, tolerance and Variance Inflation Factor (VIF) values for multicollinearity, and the Park test for heteroscedasticity, all of which confirmed that the regression model satisfies the classical assumptions. The processing of statistical data uses IBM SPSS, with hypothesis testing carried out through the t-test (partial effect), the F-test (model significance), and the coefficient of determination (R^2), all evaluated at a 5% significance level.

Research Hypothesis

Based on the review of the literature and previous research, the hypothesis proposed in this study is as follows:

H1: ABC-based marketing cost has a positive and significant effect on the market penetration strategy of batik products in Yogyakarta.

Research Model

This research model describes the relationship between the independent variable (ABC-based marketing cost) and the dependent variable (market penetration strategy). This model can be illustrated as follows:

ABC-Based Marketing Cost (X) **H1** → Market Penetration Strategy (Y)

RESULTS AND DISCUSSION

Data were collected from 80 batik business actors in Yogyakarta through direct questionnaire distribution, and all 80 questionnaires were completed correctly and were therefore eligible for statistical processing. The following are the research results obtained from the analysis using SPSS, namely:

Table 1.
Regression Analysis (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1124.837	1	1124.837	68.943	.000[b]
Residual	1272.563	78	16.315		

Total	2397.400	79

a. Dependent Variable: Market Penetration Strategy (Y)
b. Predictors: (Constant), ABC-Based Marketing Cost (X)

Source: Data processed (2026)

Table 2.
Coefficients

Model	B	Std. Error	Beta	t	Sig.
(Constant)	4.893	2.071	—	2.363	.021
ABC-Based Marketing Cost (X)	.681	.082	.813	8.305	.000

a. Dependent Variable: Market Penetration Strategy (Y)

Source: Data processed (2026)

Table 3.
Model Summary (Coefficient of Determination)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.685[a]	.469	.463	4.03920

a. Predictors: (Constant), ABC-Based Marketing Cost (X)

Source: Data processed (2026)

T Test

The analysis shows that ABC-based marketing cost has a positive and significant effect on market penetration strategy. Based on Table 2, the ABC-based marketing cost variable (X) has a regression coefficient (B) of 0.681 with a calculated t-value of 8.305 and a significance of 0.000. Since the t-count value exceeds the t-table value (1.991) and the significance value is smaller than 0.05, the hypothesis (H1) is accepted, which means that the more accurately batik enterprises allocate marketing costs based on actual activities, the higher their market penetration strategy performance.

F Test

The F-test in Table 1 shows that the regression model is statistically fit for use, with an F-count of 68.943 and a significance value of 0.000, well above the F-table value of 3.963. This confirms that ABC-based marketing cost, as the sole predictor in this model, significantly explains variation in market penetration strategy. As shown in Table 3, the R value of 0.685 indicates a fairly strong relationship between the two variables, while the R Square value of 0.469 indicates that ABC-based marketing cost explains 46.9% of the variation in market penetration strategy; the remaining 53.1% is explained by factors outside this research model, such as product innovation, raw-material quality, pricing strategy, competitive conditions, and the managerial capability of business owners. The regression equation obtained is Y = 4.893 + 0.681X.

The Effect of ABC-Based Marketing Cost on Market Penetration Strategy

The results of this study confirm that ABC-based marketing cost has a positive and significant effect on the market penetration strategy of batik products in Yogyakarta, evidenced by the t-count value of 8.305 exceeding the t-table value of 1.991 at a significance of 0.000. The positive regression coefficient of 0.681 indicates a unidirectional relationship: the better batik entrepreneurs implement ABC-based marketing-cost systems, the more effective their market penetration strategy becomes.

This finding is consistent with Nguyen and Nguyen (2021), who found that ABC adoption improves the quality of cost information and thereby supports the effectiveness of firms' strategic decision-making, and with Ahmad and Zabri (2022), who showed that modern management-accounting practices, including ABC, contribute positively to marketing performance and firms' ability to sustain competitive advantage. It also extends Hasanah and Saleh (2022) and Efendi et al. (2023), whose findings on ABC's role in pricing and waste identification are, in this study, shown to translate into a measurable strategic marketing outcome — market penetration — rather than remaining confined to cost accuracy alone.

In the batik industry, various marketing activities — digital promotion, social-media management, exhibitions, distribution, customer service, and marketplace partnerships — require different cost allocations. With an ABC system, business actors can measure the contribution and efficiency of each activity toward marketing objectives, allowing them to allocate resources more effectively so that market penetration strategy can be executed with more controlled costs and more optimal results. This supports the theoretical contribution of the present study: that ABC's value is not confined to production costing but extends meaningfully into the marketing domain, where it functions as a strategic instrument rather than a purely administrative cost-recording exercise.

Descriptively, both variables were rated highly by respondents, consistent with the ongoing digital transformation of the MSME sector that encourages more modern, data-based cost management (Muda, Harahap, & Ginting, 2023) and with Prasetyo, Widodo, and Rahmawati (2024), who found that MSMEs' ability to manage cost information accurately significantly affects the success of their marketing strategy. Practically, the findings suggest that batik entrepreneurs in Yogyakarta, and policymakers supporting the batik creative-economy sector, should treat ABC not merely as a bookkeeping tool but as a strategic instrument supporting marketing decisions — by identifying marketing activities in more detail and using the resulting cost information to design a more effective, cost-efficient market penetration strategy amid tightening competition from imported textile products.

CONCLUSION

Based on the research results, ABC-based marketing cost is proven to have a positive and significant effect on the market penetration strategy of batik products in Yogyakarta, with an R^2 of 0.469, meaning ABC-based marketing cost explains 46.9% of the variation in market penetration strategy. This shows that the accuracy with which batik enterprises allocate marketing costs to the activities that actually consume resources is a meaningful driver of how effectively they can expand their market share amid competition from cheaper imported textile products.

This study contributes to the management-accounting literature by extending ABC's conventional application in production costing into the marketing-cost domain, and by empirically linking that application to market penetration strategy within Indonesia's batik creative industry — a context rarely examined in prior ABC research. Practically, batik business actors are encouraged to adopt activity-based cost allocation for their marketing activities as a strategic decision-making tool, while policymakers supporting the creative-economy sector may consider promoting ABC literacy among SME actors as part of efforts to strengthen the competitiveness of local batik products.

This study is limited by its cross-sectional design, its geographic scope confined to the Special Region of Yogyakarta, and its focus on a single predictor variable, leaving 53.1% of the variation in market penetration strategy unexplained. Future research is encouraged to incorporate additional variables such as product innovation, digital-marketing capability, brand image, and competitive advantage, and to test the model on a larger, more geographically diverse sample or within other creative-industry sectors, so that the relationship between activity-based marketing-cost management and market-expansion outcomes can be understood more comprehensively.

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