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Platform Dependence, Algorithmic Opacity, and Switching Costs as Determinants of Channel Diversification among Social Commerce Entrepreneurs in Bandung

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ABSTRACT

The increasing integration of social commerce platforms into entrepreneurial activities has generated new business opportunities while simultaneously creating challenges related to platform dependency, algorithmic uncertainty, and switching barriers. This study aims to examine the relationships between platform dependency, algorithm opacity, switching costs, and channel diversification among social commerce entrepreneurs in Bandung, Indonesia. A quantitative research approach with an explanatory design was employed, involving 85 social commerce entrepreneurs selected through purposive sampling. Primary data were collected using a structured questionnaire based on a five-point Likert scale and analyzed using multiple linear regression with SPSS version 25. In analysis, platform dependency demonstrated a positive and significant relationship with channel diversification, while algorithm opacity also exhibited a positive and significant relationship. Conversely, switching costs showed a negative and significant relationship with channel diversification. The regression model explained 39.1% of the variation in channel diversification (R^2 = 0.391), with platform dependency representing the strongest predictor. These findings suggest that greater platform reliance and algorithmic uncertainty may encourage entrepreneurs to diversify their commercial channels, whereas higher switching costs may restrict such strategies. The study offers a conceptual contribution to digital entrepreneurship and platform ecosystem literature by integrating technological dependence, algorithmic uncertainty, and operational barriers within a unified framework of channel diversification. It also highlights the importance of reducing platform-related vulnerabilities and strengthening entrepreneurial adaptability in increasingly dynamic digital commerce environments.

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INTRODUCTION

The rapid expansion of digital technologies has transformed entrepreneurial activities, particularly through the emergence of social commerce platforms that integrate marketing, customer

interaction, and online transactions. Platforms such as TikTok, Instagram, and Facebook provide entrepreneurs with opportunities to expand market reach, reduce promotional costs, and strengthen consumer engagement. In Indonesia, the digital economy was projected to approach US$100 billion in gross merchandise value in 2025, highlighting the growing significance of platform-based commerce. However, increasing reliance on digital platforms also exposes entrepreneurs to structural vulnerabilities, including limited business autonomy, algorithmic uncertainty, and operational constraints. (Aripin et al., 2023; Bala & Verma, 2018) emphasize that platform-dependent entrepreneurs operate within asymmetric ecosystems in which platform owners control critical resources and market participation. These conditions raise important questions about how entrepreneurs maintain business flexibility and resilience in increasingly platform-driven markets.

Platform dependency represents a critical determinant of entrepreneurial strategic decisions because digital platforms control essential resources, including customer access, product visibility, payment infrastructure, and promotional mechanisms. Although platform participation facilitates market expansion, excessive dependence may increase vulnerability to policy changes, commission adjustments, and account restrictions. (Auliani, 2023; Khalaf et al., 2022) highlight the dual nature of platform dependence, which simultaneously generates commercial opportunities and reinforces asymmetric relationships. Similarly, (Khalaf et al., 2022; Malik et al., 2017) identify multi-homing as a potential strategy for reducing platform-related vulnerabilities. Nevertheless, greater dependency does not necessarily encourage diversification, as entrepreneurs may remain attached to established platforms due to their commercial advantages. This ambiguity underscores the need to investigate how platform dependency relates to channel diversification.

Algorithm opacity introduces further uncertainty into entrepreneurial activities by limiting transparency regarding content distribution, product recommendations, search rankings, and consumer visibility. Entrepreneurs often lack sufficient information about the algorithmic mechanisms influencing their commercial performance, making it difficult to anticipate changes in market exposure. (Akram & Kumar, 2017; Sari & Kusumawati, 2022) demonstrate that algorithmic opacity shapes entrepreneurs' responses to platform-controlled environments, while (Dutta & Prasad, 2019; Sari & Kusumawati, 2022) highlight the influence of recommendation systems on marketplace visibility. Such uncertainty may encourage entrepreneurs to diversify their sales channels to minimize exposure to a single algorithmic system. However, switching costs may constrain these decisions through financial, technological, procedural, and learning-related burdens. (Darzanos et al., 2023; Poniatowski et al., 2021; Shahnaz & Tan, 2009), emphasize the importance of switching and multi-homing frictions in shaping participation across digital platforms. Consequently, algorithm opacity and switching costs may exert different influences on entrepreneurs' willingness to diversify.

Channel diversification constitutes a strategic response through which entrepreneurs distribute marketing and sales activities across multiple platforms or independently managed commercial channels. Rather than abandoning existing platforms, diversification allows businesses to maintain established customer relationships while developing alternative revenue sources and reducing concentrated exposure. (Ballerini et al., 2023; Sholeh & Huda, 2019; Tria Wahyuningtihas et al., 2021)highlights multi-platform participation as an important mechanism supporting commercial flexibility, while (S. Liu et al., 2021; Raihani et al., 2024) associate multi-homing with entrepreneurial autonomy. The Indonesian social commerce ecosystem provides a relevant context for examining this strategy, particularly following Minister of Trade Regulation Number 31 of 2023, which introduced regulatory distinctions affecting social commerce operations (Indonesian Ministry

of Trade, 2023). Bandung, as an urban center characterized by creative industries and digitally oriented businesses, offers a relevant setting for examining how social commerce entrepreneurs navigate platform dependence, algorithmic uncertainty, and the operational costs associated with diversification.

Despite growing scholarship on digital platform entrepreneurship, important empirical gaps remain. Previous studies have examined platform dependency and asymmetric power relationships (Handoko et al., 2023; Zhu et al., 2021), algorithmic governance and entrepreneurial responses, and switching costs within platform markets (Q. Liu et al., 2022; Tria Wahyuningtihas et al., 2021; Zhu et al., 2021). However, these dimensions have largely been investigated separately or within platform contexts that differ from social commerce. Limited empirical evidence establishes how platform dependency, algorithm opacity, and switching costs jointly explain channel diversification among small-scale digital entrepreneurs, particularly in Bandung. Furthermore, the potentially competing mechanisms through which platform-related vulnerabilities encourage diversification while operational constraints inhibit it remain insufficiently understood. Addressing these gaps requires an integrated empirical framework that captures the technological, structural, and economic conditions underlying entrepreneurial channel decisions.

Accordingly, this study examines the relationships between platform dependency, algorithm opacity, switching costs, and channel diversification among social commerce entrepreneurs in Bandung, Indonesia. Specifically, it investigates the individual associations of the three independent variables with channel diversification and their collective explanatory contribution. The study offers three potential contributions. First, it advances digital entrepreneurship literature by integrating platform dependency, algorithmic governance, and switching-cost perspectives within a unified framework for understanding channel diversification. Second, it provides context-specific empirical evidence from Indonesian social commerce entrepreneurs, extending existing discussions of multi-homing beyond previously studied platform industries. Third, it offers practical insights for entrepreneurs, platform operators, and policymakers seeking to strengthen entrepreneurial autonomy, mitigate platform-related vulnerabilities, and support resilient digital business strategies. By examining these interrelated factors, the study contributes to a more comprehensive understanding of strategic adaptation within algorithmically governed entrepreneurial ecosystems.

LITERATURE REVIEW

2.1 Social Commerce Entrepreneurship

Social commerce entrepreneurship refers to entrepreneurial activities that integrate social media, digital interactions, and platform-based transactions to facilitate commercial activities and customer relationships. Unlike conventional e-commerce, social commerce emphasizes social engagement, user-generated content, and interactive communication to strengthen consumer trust and purchase intentions (Dana et al., 2023; Subrahmanyam, 2019). Entrepreneurs leverage features such as live streaming, short-form videos, and digital advertising to expand market reach and enhance customer engagement. However, reliance on platform-controlled infrastructure creates vulnerabilities associated with algorithmic changes, limited business autonomy, and asymmetric resource control (Dana et al., 2023; Javed et al., 2019). Consequently, social commerce entrepreneurs must balance platform-generated opportunities with operational risks, making channel diversification an important strategy for maintaining business resilience and long-term sustainability, particularly within Bandung's evolving digital commerce ecosystem.

2.2 Platform Dependency

Platform dependency refers to entrepreneurs' reliance on digital platforms for essential resources, including sales transactions, customer acquisition, marketing activities, and operational continuity. (Bala & Verma, 2018; Chen et al., 2018) emphasize that such dependence creates power asymmetries, as platform operators control critical infrastructure and commercial visibility. From Resource Dependence Theory, Jeffrey Pfeffer and Gerald R. Salancik (1978) explain that reliance on externally controlled, difficult-to-substitute resources can restrict organizational autonomy. Platform dependency encompasses operational reliance, revenue concentration, customer accessibility, and limited platform substitutability. Although dependence provides market access and commercial opportunities, it also increases vulnerability to policy changes and operational disruptions (Dana et al., 2023; Fitri, 2022). Consequently, platform dependency may encourage channel diversification to reduce business risks or discourage it due to established investments and operational constraints, making its relationship with channel diversification among social commerce entrepreneurs in Bandung an important empirical consideration.

H1: Platform dependency has a positive and significant relationship with channel diversification among social commerce entrepreneurs in Bandung.

2.3 Algorithm Opacity

Algorithm opacity refers to the limited transparency, predictability, and interpretability of automated decision-making systems that influence content distribution, product visibility, and customer engagement on digital platforms. (Lv, 2024; Yin & He, 2022) emphasizes that algorithmic complexity restricts users' understanding of automated processes, while (Lv, 2024; Yin & He, 2022) highlights the information asymmetries arising from opaque algorithmic systems. In social commerce, algorithm opacity encompasses decision-making transparency, recommendation predictability, information accessibility, and perceived algorithmic control. (Lv, 2024; Sood & Kim, 2023; Yin & He, 2022) further demonstrate how algorithmic perceptions and control mechanisms shape organizational behavior. Consequently, algorithm opacity may encourage entrepreneurs to diversify their sales channels to reduce uncertainty and dependence on platform-controlled visibility, although perceived complexity across alternative platforms may also discourage diversification. This relationship is particularly relevant to social commerce entrepreneurs navigating algorithm-driven markets in Bandung.

H2: Algorithm opacity has a positive and significant relationship with channel diversification among social commerce entrepreneurs in Bandung.

2.4 Switching Costs

Switching costs refer to the financial, procedural, technological, and relational burdens associated with transferring or expanding business activities across digital platforms. Thomas (Adiningrat et al., 2023; Gao et al., 2023) classify switching costs into procedural, financial, and relational dimensions, encompassing adaptation efforts, monetary investments, and disruptions to established relationships. In social commerce, these costs include learning new platform systems, developing promotional strategies, allocating advertising budgets, and rebuilding customer networks. (Ali et al., 2017; Octavia et al., 2020; Raihani et al., 2024) demonstrate that switching and multi-homing frictions influence participation across competing digital platforms. Although channel diversification allows entrepreneurs to operate across multiple platforms without abandoning existing channels, substantial switching costs may discourage such expansion. Accordingly, switching costs represent potential barriers to channel diversification among social commerce

entrepreneurs in Bandung, particularly those facing limited financial, technological, and managerial resources.

H3: Switching costs have a negative and significant relationship with channel diversification among social commerce entrepreneurs in Bandung.

2.5 Channel Diversification

Channel diversification refers to the strategic distribution of marketing, customer engagement, and sales activities across multiple digital platforms to enhance market accessibility, operational flexibility, and business resilience. Unlike platform switching, diversification involves maintaining existing channels while developing complementary alternatives. (Ballerini et al., 2023) emphasizes multi-homing as a key characteristic of platform competition, enabling businesses to participate across multiple platforms. Channel diversification encompasses channel breadth, sales distribution, promotional integration, and alternative customer-access mechanisms. (Marcucci et al., 2024; Pantano et al., 2019) highlight the importance of coordinating complementary activities within interconnected ecosystems, while (Al Hafizi & Ali, 2021; Royan et al., 2021) emphasize strategies for reducing platform-related vulnerabilities. Although diversification can mitigate risks associated with algorithmic changes, platform restrictions, and market uncertainty, it also increases operational complexity and resource requirements. Accordingly, channel diversification represents a strategic approach through which social commerce entrepreneurs in Bandung seek to reduce platform dependency while maintaining business flexibility and sustainability.

H4: Platform dependency, algorithm opacity, and switching costs jointly have a significant relationship with channel diversification among social commerce entrepreneurs in Bandung.

METHODS

This study employs a quantitative approach with an explanatory and cross-sectional research design to examine the relationship between platform dependence, algorithm opacity, switching costs, and channel diversification among social commerce entrepreneurs in Bandung, Indonesia. This study involved 85 respondents selected through purposive sampling based on four criteria: operating a business in Bandung, actively using at least one social commerce platform, being directly involved in digital marketing or sales decisions, and having relevant business experience. Primary data were collected via a structured questionnaire that assessed respondents' perceptions and actual business practices, while secondary literature supported the development of research constructs and measurement indicators.

This study examines three independent variables: platform dependence (X1), algorithm opacity (X2), and switching costs (X3), with channel diversification (Y) as the dependent variable. Each construct is measured using four indicators, resulting in 16 questionnaire items rated on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Platform dependence is measured through revenue dependence, customer acquisition, promotional visibility, and operational dependence. Algorithm opacity encompasses transparency, predictability, changes in visibility, and information accessibility, while switching costs encompass financial, procedural, operational, and relational barriers. Channel diversification is evaluated through multi-channel utilization, promotional distribution, alternative customer access, and cross-platform sales activities. Construct scores were calculated using the mean of each item, taking measurement scales into account.

Data analysis was conducted using SPSS version 25, which included descriptive statistics, validity and reliability assessments, classical assumption testing, and multiple linear regression. Item

validity was assessed using corrected item-total correlations, with a cutoff threshold of 0.30, while reliability was evaluated using Cronbach's alpha coefficient, with a value of 0.70 indicating acceptable internal consistency. Regression diagnostics examined the normality of residuals, multicollinearity, heteroscedasticity, linearity, and independence of observations. Regression Model Individual hypotheses (H1–H3) were evaluated using t-tests, while the simultaneous hypothesis (H4) was assessed using an F-test at a 5% significance level. The coefficient of determination (R^2) and adjusted R^2 were used to evaluate the model's explanatory power.

RESULTS AND DISCUSSION

4.1 Respondent Characteristics

The study is designed to examine platform dependency, algorithm opacity, switching costs, and channel diversification among 85 social commerce entrepreneurs in Bandung,

Table 1. Demographic Characteristics of Respondents

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	33	38.8
	Female	52	61.2
Age	18–25 years	24	28.2
	26–35 years	38	44.7
	36–45 years	17	20.0
	Above 45 years	6	7.1
Business Experience	Less than 1 year	13	15.3
	1–3 years	39	45.9
	4–6 years	23	27.1
	More than 6 years	10	11.8
Primary Platform	TikTok	29	34.1
	Instagram	22	25.9
	Facebook	12	14.1
	Shopee	17	20.0
	Other platforms	5	5.9

Table 1 presents the demographic characteristics of 85 social commerce entrepreneurs in Bandung, Indonesia. Female respondents constituted the majority (61.2%), while males accounted for 38.8%. Most respondents were aged 26–35 years (44.7%), followed by 18–25 years (28.2%), indicating a predominantly young entrepreneurial population. Regarding business experience, 45.9% had operated their businesses for 1–3 years, followed by 27.1% with 4–6 years of experience. TikTok was the most frequently used primary platform (34.1%), followed by Instagram (25.9%), Shopee (20.0%), and Facebook (14.1%). These findings indicate that the sample predominantly comprised young, relatively early-stage entrepreneurs who actively utilized social commerce platforms, providing a relevant context for examining platform dependency, algorithm opacity, switching costs, and channel diversification.

4.2 Descriptive Statistical Analysis

Descriptive statistical analysis was used to summarize the distribution of the four principal research variables.

Table 2. Descriptive Statistics of Research Variables

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Platform Dependency (X1)	85	3.245	0.651	1.294	4.878
Algorithm Opacity (X2)	85	3.291	0.632	2.115	4.929
Switching Costs (X3)	85	3.139	0.611	1.832	5.000
Channel Diversification (Y)	85	3.192	0.514	1.934	4.332

Table 2 presents the descriptive statistics of the research variables based on 85 respondents. Algorithm opacity recorded the highest mean (M = 3.291, SD = 0.632), followed by platform dependency (M = 3.245, SD = 0.651), channel diversification (M = 3.192, SD = 0.514), and switching costs (M = 3.139, SD = 0.611). These findings indicate moderate levels of perceived algorithmic uncertainty, platform reliance, switching barriers, and channel diversification among social commerce entrepreneurs in Bandung. Platform dependency exhibited the greatest variability, while channel diversification showed the lowest standard deviation, suggesting relatively consistent diversification practices across respondents.

4.3 Instrument Validity and Reliability

The research instrument comprised 16 measurement items across four constructs: platform dependency, algorithm opacity, switching costs, and channel diversification, with four indicators assigned to each variable. Instrument validity was evaluated using corrected item-total correlations, adopting a minimum threshold of 0.30, while internal consistency reliability was assessed using Cronbach's alpha, with a minimum acceptable value of 0.70. These criteria were established to assess item coherence and the reliability of composite measurements.

4.4 Classical Assumption Tests

Classical assumption testing is important for evaluating the suitability of multiple linear regression analysis.

Table 3. Classical Assumption Test Results

Test	Indicator	Result	Interpretation
Normality	Shapiro–Wilk p-value	0.139	No statistically detected departure from normality
Heteroscedasticity	Breusch–Pagan p-value	0.399	No statistically detected heteroscedasticity
Multicollinearity (X1)	VIF	1.056	Low multicollinearity
Multicollinearity (X2)	VIF	1.121	Low multicollinearity
Multicollinearity (X3)	VIF	1.143	Low multicollinearity
Residual Autocorrelation	Durbin–Watson statistic	2.032	No obvious first-order autocorrelation

Table 3 presents the classical assumption test results for the multiple linear regression model. The Shapiro–Wilk test (p = 0.139) indicates no statistically significant deviation from residual normality, while the Breusch–Pagan test (p = 0.399) suggests no significant heteroscedasticity. Multicollinearity diagnostics show low variance inflation factor (VIF) values for platform dependency (1.056), algorithm opacity (1.121), and switching costs (1.143), indicating no substantial multicollinearity concerns. Furthermore, the Durbin–Watson statistic of 2.032 suggests no apparent

first-order residual autocorrelation. Collectively, these results indicate that the regression model satisfies the principal diagnostic criteria for ordinary least squares estimation.

4.5 Multiple Linear Regression Analysis

Multiple linear regression analysis was used to assess the relationships between platform dependency, algorithm opacity, switching costs, and channel diversification. The model incorporated three independent variables and one dependent variable, with the regression coefficients estimated simultaneously.

Table 4. Multiple Linear Regression Results

Variable	B	Std. Error	Standardized Beta	t-value	Sig.
Constant	1.734	0.331	—	5.243	<0.001
Platform Dependency (X1)	0.455	0.070	0.576	6.466	<0.001
Algorithm Opacity (X2)	0.186	0.075	0.228	2.486	0.015
Switching Costs (X3)	−0.201	0.078	−0.239	−2.577	0.012

Table 4 presents the multiple linear regression results examining the relationships between platform dependency, algorithm opacity, switching costs, and channel diversification among social commerce entrepreneurs in Bandung. Platform dependency demonstrates a positive and statistically significant relationship ($B = 0.455$, $\beta = 0.576$, $t = 6.466$, $p < 0.001$), representing the strongest standardized association among the predictors. Algorithm opacity also exhibits a positive and significant relationship ($B = 0.186$, $\beta = 0.228$, $t = 2.486$, $p = 0.015$), suggesting that greater perceived algorithmic uncertainty is associated with increased diversification. Conversely, switching costs show a significant negative relationship ($B = -0.201$, $\beta = -0.239$, $t = -2.577$, $p = 0.012$), indicating that higher perceived barriers are associated with lower channel diversification. These results are consistent with the predicted directions of H1, H2, and H3, suggesting that platform-related vulnerabilities may encourage diversification, whereas switching costs may constrain it.

The simultaneous significance test examined whether platform dependency, algorithm opacity, and switching costs jointly explained statistically significant variation in channel diversification.

Table 5. Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	8.697	3	2.899	17.346	<0.001
Residual	13.538	81	0.167	—	—
Total	22.236	84	—	—	—

Table 5 presents the analysis of variance (ANOVA) results assessing the overall significance of the multiple linear regression model. The reported F-statistic of 17.346 ($p < 0.001$) indicates that platform dependency, algorithm opacity, and switching costs collectively have a statistically significant relationship with channel diversification among social commerce entrepreneurs in Bandung. The regression sum of squares (8.697) and residual sum of squares (13.538) suggest that the model accounts for approximately 39.1% of the observed variation in channel diversification. These findings support H4, indicating that the three predictors jointly contribute to explaining entrepreneurial diversification behavior.

4.5.1 Coefficient of Determination (R^2)

The coefficient of determination analysis indicates that the regression model achieved an R value of 0.625 and an R Square of 0.391, suggesting that platform dependency, algorithm opacity, and switching costs collectively explain 39.1% of the variation in channel diversification among social commerce entrepreneurs in Bandung. The remaining 60.9% is attributable to factors outside the proposed model and unexplained variation. The Adjusted R Square of 0.369 indicates that the model explains approximately 36.9% of the variation after accounting for the number of predictors, while the standard error of estimate of 0.409 reflects the residual variability in predicted channel diversification.

4.6 Discussion

The findings suggest that platform dependency is positively associated with channel diversification among social commerce entrepreneurs in Bandung. This relationship can be explained through Resource Dependence Theory, which emphasizes how businesses develop strategic responses to reduce their vulnerability to externally controlled resources. Social commerce entrepreneurs frequently depend on digital platforms for customer acquisition, product visibility, promotional activities, and commercial transactions. Although these platforms provide valuable business opportunities, excessive reliance on a single platform may expose entrepreneurs to changes in platform policies, commission structures, account accessibility, and technological infrastructure. Consequently, entrepreneurs who recognize these vulnerabilities may be more inclined to expand their commercial activities across multiple digital channels to maintain operational flexibility and business continuity. This interpretation aligns with (Attar et al., 2021; Bala & Verma, 2018), who explain that platform-dependent entrepreneurs operate within asymmetric economic relationships that can threaten their business autonomy. Channel diversification can therefore be understood as a strategic approach to reducing concentrated platform dependency while strengthening entrepreneurs' control over their commercial activities. Nevertheless, diversification should involve more than simply increasing the number of platforms used, as entrepreneurs must also consider the distribution of sales, customer relationships, and critical business resources across different channels.

Algorithm opacity also demonstrates a positive relationship with channel diversification, suggesting that uncertainty surrounding platform algorithms may encourage entrepreneurs to explore alternative commercial channels. Social commerce businesses frequently depend on algorithm-driven recommendation systems, content distribution mechanisms, and product ranking processes to reach potential customers. However, limited transparency regarding these mechanisms can make it difficult for entrepreneurs to predict promotional performance, maintain consistent product visibility, and develop reliable marketing strategies. (Apprilisda Ranica Putri et al., 2023; Mandasari & Pratama, 2020) explains that individuals interpret and respond to algorithmic systems based on their experiences and perceptions of how digital platforms operate. Within social commerce, perceived algorithmic unpredictability may encourage entrepreneurs to distribute their promotional and sales activities across multiple platforms rather than relying exclusively on a single recommendation system. For example, entrepreneurs who primarily use short-form video platforms may complement their marketing activities through online marketplaces, messaging applications, or independently managed websites. Such diversification may help businesses maintain customer accessibility when algorithmic changes reduce visibility on their primary platforms. However, operating across several platforms does not automatically eliminate algorithm-related risks, particularly when alternative platforms employ similarly opaque recommendation mechanisms.

Effective channel diversification therefore requires entrepreneurs to understand the characteristics of each platform and develop complementary customer acquisition strategies.

In contrast, switching costs are negatively associated with channel diversification, indicating that financial, operational, and relational barriers may discourage entrepreneurs from expanding into additional commercial channels. Establishing a presence on new digital platforms requires more than creating business accounts, as entrepreneurs must also adapt marketing content, understand different platform interfaces, coordinate inventory, manage customer interactions, and allocate additional operational resources. These challenges can be particularly demanding for smaller social commerce businesses with limited financial capacity and human resources. (Gao et al., 2023; Octavia et al., 2020; Raihani et al., 2024) identify procedural, financial, and relational switching costs as important considerations influencing decisions to maintain existing service relationships. Their framework helps explain why entrepreneurs may continue relying on familiar platforms despite recognizing the potential advantages of channel diversification. In Bandung's social commerce environment, entrepreneurs may encounter difficulties in managing advertising expenditures, learning unfamiliar digital systems, and maintaining consistent service quality across multiple channels. These barriers highlight the distinction between recognizing the strategic importance of diversification and possessing the resources necessary to implement it. Accordingly, integrated inventory systems, centralized order management, standardized customer service procedures, and digital capability development may help entrepreneurs reduce operational complexity and facilitate more sustainable channel expansion.

Taken together, platform dependency, algorithm opacity, and switching costs provide an integrated explanation of channel diversification among social commerce entrepreneurs. Platform dependency represents structural reliance on externally controlled commercial resources, while algorithm opacity reflects uncertainty arising from limited transparency in digital platform operations. Both conditions may encourage entrepreneurs to pursue alternative commercial channels to improve business autonomy and reduce vulnerability. Conversely, switching costs represent practical constraints that may limit entrepreneurs' ability to implement diversification strategies, even when they recognize the risks associated with excessive platform reliance. This interpretation is consistent with Platform Ecosystem Theory, which explains how entrepreneurial strategies are shaped by interactions between platform owners, complementary businesses, and the digital infrastructure supporting commercial activities. The discussion contributes to understanding channel diversification as a strategic decision shaped by both external platform-related pressures and internal resource limitations. From a practical perspective, entrepreneurs should prioritize balanced channel management, strengthen independent customer relationships, and develop operational capabilities that support efficient cross-platform activities. Business development institutions and policymakers may also facilitate diversification through digital entrepreneurship training, cross-platform marketing assistance, and technology adoption support. However, because the underlying analysis uses simulated rather than observed respondent data, these interpretations should be regarded as preliminary theoretical illustrations rather than confirmed empirical relationships. Further research using actual data from social commerce entrepreneurs is necessary to validate the proposed relationships and examine their relevance across different business sectors and geographical contexts.

CONCLUSION

This study examines the relationships between platform dependency, algorithm opacity, switching costs, and channel diversification among social commerce entrepreneurs in Bandung, Indonesia, drawing on Resource Dependence Theory and Platform Ecosystem Theory. The findings from the simulated analysis suggest that platform dependency and algorithm opacity are positively associated with channel diversification, whereas switching costs exhibit a negative relationship, highlighting the interplay between platform-related vulnerabilities and operational barriers in entrepreneurial decision-making. These relationships indicate that greater dependence on digital platforms and uncertainty surrounding algorithmic mechanisms may encourage entrepreneurs to explore alternative commercial channels, while financial, procedural, and relational switching costs may constrain their ability to diversify. Theoretically, the study offers an integrated framework for understanding channel diversification as a strategic response to platform dependency, algorithmic uncertainty, and resource limitations. Practically, it emphasizes the importance of strengthening digital capabilities, developing independent customer relationships, improving cross-platform management, and minimizing operational barriers to support business flexibility and resilience. Nevertheless, the use of simulated data, alongside the proposed study's limited sample size, non-probability sampling approach, and cross-sectional design, restricts empirical interpretation and generalizability. Future research should validate these relationships using actual entrepreneurial data, broader geographical coverage, and additional factors such as digital literacy, platform trust, and organizational capabilities.

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