

# Growth Hacking Capability of SMEs: The Roles of Digital Mindset, Collaborative Capability, and Organizational Agility

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## Article History

Received on 21 May 2026

1st Revised on 22 May 2026

2nd Revised on 10 June 2026

3rd Revised on 15 June 2026

Accepted on 17 June 2026

## Abstract

**Purpose:** This study examines the Growth Hacking Capability (GHC) of creative industry Small and Medium-sized Enterprises (SMEs) in West Java, Indonesia. Drawing on Dynamic Capability Theory, this study conceptualizes GHC as an organizational capability that enables SMEs to learn from customer data, pilot small experiments, and adapt product features based on feedback. This study is novel because it combines a digital mindset, collaboration, and agility as antecedents of GHC, representing cognitive, relational, and adaptive capability foundations.

**Research Methodology:** We surveyed 150 creative industry SME owners and managers in West Java and analyzed the data with Partial Least Squares Structural Equation Modeling (PLS SEM) SmartPLS 4.0.

**Results:** A digital mindset, collaborative capability, and organizational agility positively affect GHC, which in turn boosts market responsiveness and innovation performance. GHC increases firms' speed in responding to customer needs, leading to more rapid product updates and higher innovation performance. Therefore, market responsiveness links GHC to innovation.

**Conclusions:** GHC is not merely a digital marketing practice but an organizational capability that enables SMEs to transform digital learning, collaboration, and agility into responsiveness and innovation.

**Limitations:** This study is limited to creative-industry SMEs in West Java and explains GHC, market responsiveness, and innovation performance through selected internal capabilities. Future studies may include additional variables, such as entrepreneurial orientation, absorptive capacity, digital marketing capability, financial resources, leadership support, market dynamism, firm size, and firm age.

**Contributions:** This study advances Dynamic Capability Theory by explaining how cognitive, relational, and adaptive capability foundations jointly shape GHC in resource-constrained SMEs. It also enriches the GHC literature by showing how GHC is developed and translated into innovative outcomes through market responsiveness.

**Keywords:** *Collaborative Capability, Digital Mindset, Growth Hacking Capability, Innovation Performance, Organizational Agility*

**How to Cite:** Munawar, F., & Handayani, R. (2026). Growth Hacking Capability of SMEs: The Roles of Digital Mindset, Collaborative Capability, and Organizational Agility. *Studi Ilmu Manajemen dan Organisasi (SIMO)*, 7(2) 67-86.

## 1. Introduction

The digital age has changed the functions, interactions, and competitive strategies of SMEs in the global market. [Scuotto, Nicotra, Del Giudice, Krueger, and Gregori \(2021\)](#) state that digitalization encourages the flexibility and creativity of SMEs in responding to changes in the market dynamics. More than 70% of EU companies with employees with high digital skills have been found to increase productivity and competitiveness in innovation compared to those that operate traditionally. The digital divide is a challenge for SMEs, especially in developing countries, even as connectivity itself offers potential for business growth. [Joensuu-Salo and Matalamäki \(2023\)](#) found that small SMEs face problems in maintaining performance and sustaining growth compared to medium-sized firms, as they have fewer digital capabilities.

This problem is also apparent in Indonesia, where more than 60% of SMEs face difficulties adopting digital technology due to a lack of human resources, low levels of digital literacy, and insufficient infrastructure. The impact of SMEs on a country's economic development is direct and indirect. In Indonesia, SMEs constitute the main source of job creation, as they represent 99.7% of the 4.7 million companies operating in this country ([Farida & Setiawan, 2022](#)). However, their growth is inhibited by challenges such as a lack of adequate financing, inadequate infrastructure, and excessive bureaucratic processes related to human resources, marketing, technology, and intellectual capital ([Zahara, Muslimin, Rumijati, & Rony, 2024](#)).

Additionally, Indonesia continues to face major challenges in strengthening its innovation capacity, as reflected in its position of 61<sup>st</sup> out of 132 countries in the Global Innovation Index 2023, indicating that innovation activities in the business sector are still weak. The World Bank Enterprise Survey reports that only 5.5% of companies in Indonesia have introduced new products or services, far below the Asia Pacific average of 27%, and only 4.7% allocate budgets for Research and Development (R&D) activities ([World Bank, 2023](#)). Limited innovation capacity is also evident in the contribution of SMEs to national exports, which remains at 15%, showing that innovation-driven performance has not yet strengthened broader competitiveness ([Bappenas, 2023](#)).

Previous research has shown that SME innovation performance and competitiveness are influenced by various factors, such as organizational culture, marketing capabilities, entrepreneurial orientation, and the business environment ([Anning-Dorson, 2021](#); [Anwar & Shah, 2021](#); [Elfahmi, Chandrarin, & Manan, 2021](#); [Oduro & Mensah-Williams, 2023](#)). However, SMEs currently require tools and structures that can assist them in rapidly redesigning their businesses to foster creative, agile, and efficient business models ([Fehrer, Fischer, Leemans, Röglinger, & Wynn, 2022](#); [Rumanti, Rizana, & Achmad, 2023](#)). To address these challenges, the concept of growth-hacking capability (GHC) has been developed as a methodological approach aimed at encouraging experimentation and continuous learning across business value chains ([Bargoni, Jabeen, Santoro, & Ferraris, 2024](#); [Gerlich, Brenk, Antonio, Kanbach, & Kraus, 2025](#); [Giordino, Troise, Bresciani, & Camilleri, 2025](#)).

Growth Hacking Capability (GHC) refers to a company's ability to implement innovative and efficient strategies aimed at rapid growth ([Bresciani, Giordino, & Troise, 2024](#)). Furthermore, GHC is associated with the rapid implementation of effective and cost-efficient marketing strategies to attract and retain customers, increase product sales, and successfully expand businesses ([Bargoni, Jabeen, et al., 2024](#); [Cavallo, Cosenz, & Noto, 2024](#)). Although academic interest in growth hacking has grown, the scholarly understanding of how SMEs develop GHC remains limited. Recent studies describe GHC as a methodological approach that fosters experimentation along the business value chain; however, the literature lacks sufficient empirical evidence on the organizational capabilities that enable SMEs to develop GHC ([Giordino et al., 2025](#)). Previous research has begun to examine GHC alongside antecedents such as big data analytics capability, innovation capability, digital transformation, and intellectual capital ([Bresciani et al., 2024](#); [Zhou, Li, & Cheng, 2025](#)).

However, the influence of a digital mindset, collaborative capability, and organizational agility on GHC has not been empirically investigated within a comprehensive integrated framework. This creates a theoretical gap, as GHC relies on SMEs' cognitive, relational, and adaptive capabilities ([Bani-Melhem,](#)

[Akhtar, Zahoor, Khalid, & Usman, 2025](#); [Bargoni, Jabeen, et al., 2024](#)). Moreover, while prior studies have related GHC to financial and organizational outcomes, the process through which GHC enhances innovation performance is less well articulated ([Giordino et al., 2025](#); [Zhou et al., 2025](#)). In dynamic markets, GHC may not automatically generate innovation performance unless SMEs can translate experimental insights, customer data, and market feedback into timely responses to customer needs ([Troisi, Maione, Grimaldi, & Loia, 2020](#)). Therefore, drawing on evidence that market-oriented and customer-responsive processes encourage firms to translate customer knowledge and market information into innovation outcomes, this study proposes market responsiveness as the variable through which GHC is converted into innovation performance in creative-industry SMEs ([Agyapong, Acquah, Abiew, & Zan, 2024](#)). The strength of this study lies in the integration of the digital mindset, collaborative capabilities, and organizational agility as antecedent variables of GHC. These factors have not been widely explored within relational structures, which are expected to make theoretical contributions. Furthermore, examining the role of market responsiveness as a mediator between GHC and innovation performance enriches the understanding of the drivers of competitive advantage in digital SMEs.

## **2. Literature Review and Hypotheses Development**

### **2.1 Theoretical Foundation**

This study is grounded in dynamic capability theory, which describes how firms sense opportunities, seize them through strategic action, and reconfigure resources to adapt to environmental change ([Nguyen, Pham, & Freeman, 2023](#)). The importance of dynamic capabilities is particularly salient in the case of SMEs, as small firms are often subject to resource constraints, market uncertainty, and pressure to innovate quickly ([Hernández-Linares, Kellermanns, & López-Fernández, 2021](#)). Growth Hacking Capability (GHC) can be seen as a specific form of dynamic capability because it is related to rapid experimentation, data-driven learning, customer feedback, and continuous strategic adjustment ([Troisi et al., 2020](#)).

However, GHC is not only the result of using digital tools but also depends on the firm's cognitive, relational, and adaptive capabilities. In this study, a digital mindset is the cognitive foundation for interpreting digital change as an opportunity for learning and experimentation ([Solberg, Traavik, & Wong, 2020](#)); collaborative capability is the relational foundation for accessing and combining external knowledge from stakeholders ([Lu, Qi, & Yu, 2024](#)); and organizational agility is the adaptive foundation for reconfiguring resources and adjusting strategies in dynamic markets ([Yi, Oh, & Amenuvor, 2023](#)).

### **2.2 Growth Hacking Capability**

Growth Hacking Capability (GHC) integrates a data-driven mindset into the marketing decision-making process to direct company strategies with higher precision ([Bresciani et al., 2024](#)). In practice, GHC utilizes various tools and techniques to optimize marketing and operational processes to retain customers while driving faster business growth ([Macca, Janovská, Troise, & Santoro, 2025](#)). Organizations that implement it typically test marketing programs, product features, and ways of interacting with customers, and then evaluate the results using analytical data to improve decision quality and adjust their steps to market changes ([Yakivchenko, 2025](#)). The process of transforming raw data into customer knowledge can be used to create relevant offerings and support long-term growth ([Macca et al., 2025](#)).

### **2.3 Digital Mindset**

A digital mindset refers to individuals' or organizations' perceptions of adopting and using digital technology to support various work-based activities ([Valta, Hildebrandt, & Maier, 2024](#)). This includes the ability to make data-based decisions and leverage analysis to sustain businesses amidst changes ([Grimaldi, Troisi, Papa, & de Nuccio, 2025](#)). Several studies have indicated that a digital mindset enhances innovation by positioning individuals and organizations to adapt to technological advancements and market dynamics ([Kreiterling, 2023](#); [Z. Wang, Lin, Chen, Lyulyov, & Pimonenko, 2023](#)).

#### **2.4 Collaborative Capability**

Collaborative capability is the ability of entities to collaborate effectively with one another to pursue common goals by pooling resources, knowledge, and skills ([Fawcett, Fawcett, Knemeyer, Brockhaus, & Webb, 2021](#); [Xia, Li, Weng, Zhang, & Gao, 2020](#)). This capacity relies on two prerequisites: trust and willingness to share knowledge, as well as the ability to reconcile differing ways of working among partners ([Friman, Olsson, & Thorin, 2023](#)). Joint knowledge transmission and integration lead to innovation, which means that new technologies and solutions are created based on the exchange of thoughts among partners ([L. Zhang et al., 2021](#)).

#### **2.5 Organizational Agility**

Organizational agility is an organization's ability to effectively adapt to and respond to changes and uncertainties in the environment ([Mrugalska & Ahmed, 2021](#)). This notion highlights the capacity of organizations to cope with risks associated with market volatility, technological changes and fluctuating customer preferences ([Motwani & Kataria, 2024](#)). Agile entities are those that are able to effectively redirect resources and reinvent products or services in order to remain relevant in the perception of prospective customers ([Perides & Vasconcellos, 2023](#)).

#### **2.6 Contradictory Findings and Boundary Conditions**

Although prior studies generally suggest that digital transformation and capabilities improve firm outcomes, the evidence is not always consistent. For example, [Giordino et al. \(2025\)](#) found that big data- analytics and innovation capabilities increased GHC, whereas digital transformation had no significant direct effect. This finding suggests that digitalization alone may not be sufficient to build GHC unless it is supported by managerial cognition, collaborative learning, and organizational adaptability. Dynamic capabilities improve SME performance only when mediated by factors such as strategic orientation, innovation, or market responsiveness ([Wimpertiwi, Arief, Alamsjah, & Setiowati, 2024](#)).

The effects of digital, collaborative, and agile capabilities depend on the boundary conditions. Environmental dynamism enhances the value of agility in some contexts, but excessive uncertainty hampers a firm's ability to transform digital capabilities into innovation outcomes ([J. Wang, Zhang, & Zhao, 2025](#)). Collaboration does not guarantee innovation because its benefits depend on absorptive capacity, knowledge integration capability, partner type, and partnership quality ([Park, Jun, Lee, & Yoo, 2024](#)). Additionally, creative-industry SMEs in emerging markets often operate with limited resources, unstable customer preferences, and uneven digital readiness.

#### **2.7 The Impact of Digital Mindset on Growth Hacking Capability**

Several studies have confirmed that a digital mindset encourages the adaptation process, innovation, and successful adoption of growth hacking capabilities (e.g., [Cavallo et al., 2024](#); [Ye, Liu, Luo, & Yannopoulou, 2024](#)). [Vo, Nguyen, Nguyen, Vrontis, and Bianco \(2024\)](#) found that individuals who are ready to interact with technology tend to exhibit innovative behavior within organizations. A digital mindset alone produces GHC only when it is translated into experimentation routines and data-driven actions. This is important because digital transformation initiatives may fail when firms focus only on technology adoption without developing the cognitive readiness required to use digital tools strategically ([Demirel, 2024](#)). Considering the demonstrated role of a digital mindset in shaping growth-hacking capabilities, we propose the following hypothesis:

*H<sub>1</sub>*: Digital mindset positively affects Growth Hacking Capability (GHC)

#### **2.8 The Impact of Collaborative Capability on Growth Hacking Capability**

Collaborative capabilities strengthen growth growth-hacking capacity by maximizing shared resources, knowledge, and skills and promoting innovation ([Audretsch, Belitski, Caiazza, & Phan, 2023](#)). [Bargoni, Jabeen, et al. \(2024\)](#) also explain that companies should strengthen their dynamic international marketing capabilities, particularly in big data analytics, digital marketing, and automation, by collaborating and leveraging shared knowledge. However, collaboration may not always produce superior innovation or growth outcomes because SMEs need an absorptive capacity to identify, acquire, and apply external knowledge. Thus, SMEs benefit from collaboration only when they can transform

partner knowledge and customer feedback into actionable growth strategies (Lu et al., 2024). Taken together, these findings provide a foundation for the following hypothesis:

*H<sub>2</sub>*: Collaborative capability has a positive effect on Growth Hacking Capability (GHC)

### **2.9 The Impact of Organizational Agility on Growth Hacking Capability**

Organizational agility is an organization's ability to adapt quickly to change and manage uncertainty in a flexible and responsive manner (Motwani & Kataria, 2024). Previous research has shown that agile organizations utilize digital technology more effectively and collaborate more productively to generate faster innovation (Motamedimoghadam, Mira da Silva, & Amaral, 2024). Agile organizations can adopt the latest digital strategies to accelerate technology adoption and increase their capacity to implement growth-hacking strategies more effectively (Cubillas-Para, Cegarra-Navarro, & Vătămănescu, 2024). Additionally, organizational agility supports companies in quickly analyzing growth strategies based on real-time market feedback and accelerating the growth-hacking process in a low-cost and innovative manner (Levallet & Chan, 2022). Nevertheless, agility should be understood as a conditional capability rather than an automatic performance source. Prior studies suggest that agility may create stronger benefits in dynamic environments, but excessive environmental uncertainty can also reduce firms' ability to convert digital and organizational capabilities into innovation outcomes (J. Wang et al., 2025). Based on this body of evidence, the following hypothesis is proposed.

*H<sub>3</sub>*: Organizational agility has a positive effect on Growth Hacking Capability (GHC)

### **2.10 Growth Hacking Capability on Market Responsiveness**

Previous research in the business sector explains that GHC determines market response by relying on data-driven approaches, innovation, and adaptive marketing techniques (Bargoni, Smrčka, Santoro, & Ferraris, 2024). GHC provides companies with the opportunity to respond to market changes more efficiently and quickly through strategies focused on rapid experimentation and data-driven decision making (Santoro, Jabeen, Kliestik, & Bresciani, 2024). However, SMEs' ability to turn experimental data and customer feedback into swift market actions determines how GHC influences market responsiveness in SMEs. It should be noted that because growth hacking generates insights, these insights only become valuable when firms can respond quickly to changing customer needs and market opportunities (Bargoni, Smrčka, et al., 2024). Therefore, the following hypothesis is proposed:

*H<sub>4</sub>*: Growth Hacking Capability (GHC) has a positively affects market responsiveness

### **2.11 The Impact of Growth Hacking Capability on Innovation Performance**

GHC is viewed as an effective approach to fostering innovation performance based on data-driven experimentation and creative techniques for process and business output optimization (Bargoni, Jabeen, et al., 2024). The GHC application combines creativity, data analysis, and customer feedback, making the innovation process more market-oriented (Santoro et al., 2024). This dynamic empowers a company to capitalize on customer learnings and strengthen the impact of its innovation efforts. However, the effect of GHC on innovation performance should not be assumed to be automatic or direct. Growth hacking produces experimental insights and customer data, but these insights must be interpreted as product or marketing innovations before they can improve innovation performance (Troisi et al., 2020). Therefore, we propose the following hypothesis:

*H<sub>5</sub>*: Growth Hacking Capability (GHC) has a positive effect on innovation performance

### **2.12 The Impact of Market Responsiveness on Innovation Performance**

Market responsiveness refers to an organization's ability to identify and respond to changes in market conditions, customer preferences, and competitive pressures (Kalaiganam, Tuli, Kushwaha, Lee, & Gal, 2021). This leads to better innovation performance, as fast adaptation means taking advantage of new opportunities and tailoring products to market preference (Cho, Jeong, Kim, & Cho, 2024). X. Wang, Gu, Ahmad, and Xue (2022) emphasized that market responsiveness leads to innovation and a company's performance by enhancing customer engagement and satisfaction. Nevertheless, market responsiveness may not always lead to innovation performance if firms lack the resources, learning capabilities, or flexibility to convert market information into concrete innovation outcomes. Prior studies suggest that the relationship between market-oriented responses and performance may depend

on organizational learning, market dynamism, and firm-specific capabilities ([Agyapong et al., 2024](#)). Therefore, based on these arguments, we propose the following hypothesis:

*H<sub>6</sub>*: Market responsiveness positively affects innovation performance

### **2.13 The Mediation Role of Market Responsiveness**

Firms sensitive to market forces are more likely to leverage growth-hacking capabilities for innovation and improved organizational performance ([Ranjan & Nayak, 2024](#)). Through the process of market responsiveness, market orientation operationalizes growth-hacking capabilities by enhancing their impact on innovation, and organizations that are attuned to market conditions can adapt their data-driven, customer-oriented growth strategies to changes in the broader strategic business context ([Yakivchenko, 2025](#)). Therefore, market responsiveness enables SMEs to translate experiments into new products or features by quickly acting on customer feedback ([Agyapong et al., 2024](#)). In this study, market responsiveness is positioned as the mechanism through which SMEs convert GHC into innovation performance, especially in creative industries, where customer preferences and digital trends change rapidly. The evidence discussed above leads to the following hypothesis:

*H<sub>7</sub>*: Market responsiveness mediates the effect of growth hacking capability on innovation performance

## **3. Methodology**

This study adopts an explanatory quantitative approach with primary data obtained through a survey of creative industries that fit the description of owners or managers in the fashion, culinary, craft, design, and digital sectors. The survey covers various cities and districts in West Java Province, including Bandung, Bogor, Bekasi, Sukabumi, Tasikmalaya, Depok, Cianjur, and Garut, as these areas are centers of creative industries in West Java. Respondents were asked to fill in a questionnaire comprising relevant research items on digital mindset, collaborative capability, organizational agility, growth hacking capability, market responsiveness, and innovation performance, rated on a five-point Likert scale.

The constructs in this study were measured using multi-item scales adapted from previously validated studies. This adapted the growth-hacking scale from [Giordino et al. \(2025\)](#) and defined it by experimentation, data-driven learning, and growth-focused decision-making. [Costa, Brauer, Victorino, and Abreu \(2024\)](#) to measure the digital mindset as individual or managerial beliefs that shape engagement with digital transformation and digital technology use. The operationalized collaborative capability following [Lu and Yu \(2020\)](#), focusing on sharing knowledge, interacting with partners, and applying external insights to innovate.

[Yi et al. \(2023\)](#) to measure organizational agility as a firm's ability to respond quickly, reconfigure resources, and adjust strategies in dynamic environments. This adapted market responsiveness items from prior studies on market orientation and customer responsiveness, which reflect the firm's ability to respond to customer needs and market changes ([Petzold, Barbat, Pons, & Zins, 2019](#)). Innovation performance was measured using items from studies on product, process, marketing, and organizational innovation outcomes in SMEs ([Al Mamun et al., 2022](#)).

The carried out the scale adaptation in three steps, such as item selection, wording revision, and pilot testing. The selected items that matched each construct and reworded them for creative-industry SMEs in West Java to preserve the original theoretical meaning. A five-point Likert scale (1 = strongly disagree to 5 = strongly agree) was used for the survey. The adapted questionnaire was reviewed for clarity, contextual appropriateness, and content validity, and pre-tested by experts and practitioners before distribution. Since the data were collected using a single self-reported questionnaire, several procedural remedies were applied to reduce the potential common method bias. Respondents were assured of anonymity and confidentiality, informed that there were no right or wrong answers, and encouraged to answer the questionnaire honestly. The tested for common method bias before interpreting the structural model.

This study followed ethical principles for research involving human participants, particularly informed consent, voluntary participation, confidentiality, and anonymity. Participants were informed about the study, provided informed consent before data collection, and were assured of confidentiality and anonymity. Participants could withdraw from the study at any time without penalty. The collected data were securely stored and used only for academic research purposes. Because the study involved a non-interventional survey of SME owners/managers and did not collect sensitive personal or medical information, formal ethical approval was not required under the applicable institutional research procedures. The sampling technique was purposive, requiring at least one year of digital technology use and collaboration with vendors, community members, influencers, or institutions in operational and marketing activities. The sample size was determined by considering the statistical power requirements for PLS-SEM rather than relying only on the traditional 5-10 times indicators rule. We assessed sample adequacy using a power-based approach that considered the maximum number of structural paths, expected effect size, significance level, and desired power (Memon et al., 2020). In the present model, the largest number of predictors pointing to one endogenous construct is three, such as digital mindset, collaborative capability, and organizational agility as predictors of growth hacking capability. With 150 valid responses, a 5% significance level, and 80% statistical power, the sample size was sufficient to detect effects in the small-to-medium range.

The analysis was performed using Partial Least Squares Structural Equation Modeling (PLS-SEM) through SmartPLS 4.0. The outer model assessment involved factor loading, Average Variance Extracted, convergent and discriminant validity, Cronbach’s alpha and composite reliability, and Variance Inflation Factor to confirm no multicollinearity. The inner model assessment consisted of testing R<sup>2</sup>, Q<sup>2</sup>, path coefficients, and a 5,000-sample bootstrap test for direct and indirect effects.

**4. Results and Discussion**

**4.1 Respondent Characteristics**

The respondent profile in this study shows a diverse group of participants in Table 1. Based on gender, male entrepreneurs comprise 52% and female entrepreneurs comprise 48%, indicating almost equal involvement in SME activities. By region, most respondents came from Bogor (34%) and Bandung (32%), both of which are major economic areas with many entrepreneurs.

Table 1. Demographic characteristics of the respondents

Variables	Characteristic	Frequency	%age (%)
Gender	Male	78	52.0
	Female	72	48.0
Business location	Bogor	51	34.0
	Bandung	48	32.0
	Bekasi	15	10.0
	Sukabumi	6	4.0
	Tasikmalaya	6	4.0
	Depok	6	4.0
	Cianjur	6	4.0
	Garut	6	4.0
Business duration	< 2 Years	48	32.0
	2-5 Years	39	26.0
	6-10 Years	36	24.0
	> 10 Years	27	18.0
Number of employees	1-4 Employees	63	42.0
	5-19 Employees	39	26.0
	20-99 Employees	24	16.0
	> 100 Employees	24	16.0
Business category	Culinary	66	44.0
	Fashion	39	26.0
	Digital Technology/IT	18	12.0

	Graphic/Product Design	15	10.0
	Others	6	6.0
	Handicrafts	3	2.0
Monthly business income	IDR 10–50 million	57	38.0
	IDR 51–100 million	51	34.0
	< IDR 10 million	27	18.0
	> IDR100 million	15	10.0

The relatively small gap between male and female respondents suggests that the sample better represents the entrepreneurial participation in creative-industry SMEs. It also shows a concentration of respondents in Bogor and Bandung. These two areas are West Java’s creative hubs because SMEs there face fast-changing digital markets, shifting customer trends, and collaboration opportunities, making them good cases for studying growth-hacking capability. Most respondents have operated their businesses for less than two years, representing 32 % of the sample, followed by those with 2-5 years of business experience (26%). In terms of the number of employees, most respondents are micro-enterprises with 1-4 employees, accounting for 42 % of the sample.

This pattern is particularly interesting because the sample is dominated by small, recently founded firms. Younger SMEs and microenterprises usually face stronger resource constraints, limited market access, and pressure to grow quickly. Therefore, they are relevant to the study of growth-hacking capability, which emphasizes affordable tests, quick learning with digital tools, and customer feedback. Based on business category, most respondents operate in the culinary sector, accounting for 44 %, followed by fashion at 26 %, digital technology/IT at 12 %, graphic/product design at 10 %, others at 6 %, and handicrafts at 2 %. In terms of monthly business income, most respondents earn between Rp10–50 million per month, representing 38 % of the sample, followed by IDR 51-100 million at 34 %.

Culinary and fashion SMEs are particularly responsive to social media trends, visual branding, and rapid changes in consumer demand. This makes them suitable for examining market responsiveness and innovative performance. Most respondents were small businesses earning IDR 10-100 million per month. This suggests that the sample consists of SMEs with sufficient business activity to use digital tools, collaborate with external parties, and experiment with growth strategies while still facing typical SME limitations. The sample was relatively gender-balanced and concentrated in active creative regions. Most firms are young, small, and operate in trend-sensitive sectors such as culinary and fashion industries. These characteristics make the respondents appropriate for investigating how a digital mindset, collaboration with partners, and organizational agility help firms grow, respond to market changes and innovate.

#### 4.2 Results of the Outer Model Analysis

The results of the outer model assessment in Table 2 show that all measurement constructs meet the indicator reliability, convergent validity, and multicollinearity requirements. The loading values ranged from 0.721 to 0.866, confirming that all indicators met the recommended loading criteria. VIFs (1.317–2.395), so multicollinearity is minor, then Composite Reliability (CR) and Average Variance Extracted (AVE) confirm satisfactory reliability and adequate variance extraction.

Table 2. Outer model testing

Item Constructs	Code	Loading	VIF	CR	AVE
Digital Mindset:					
I am open to learning new technologies that can support my business.	DM1	0.779	1.976	0.858	0.548
I feel comfortable using digital tools and applications for daily business activities.	DM2	0.831	1.602	0.858	0.548
I use digital data (customer data, sales, and social media) to make business decisions.	DM3	0.843	1.516	0.858	0.548

Item Constructs	Code	Loading	VIF	CR	AVE
I actively seek information and trends related to digital technology.	DM4	0.819	1.712	0.858	0.548
I believe that digital literacy can improve my business performance and competitiveness.	DM5	0.788	1.378	0.858	0.548
<b>Collaborative Capability:</b>					
I regularly share important information with my business partners or collaborators.	CC1	0.723	1.493	0.868	0.568
I build work relationships based on trust with my business partners.	CC2	0.749	1.57	0.868	0.568
I communicate clearly and openly during collaborations.	CC3	0.721	1.669	0.868	0.568
My business partners have the same commitment to achieving shared goals as I do.	CC4	0.767	1.758	0.868	0.568
I am open to receiving and providing feedback during the collaboration.	CC5	0.804	1.521	0.868	0.568
<b>Organizational Agility:</b>					
Our team quickly adjusts its strategies when market conditions change.	OA1	0.721	1.358	0.835	0.559
We can quickly take action if disruptions or market changes occur.	OA2	0.750	1.317	0.835	0.559
We can easily initiate new projects or initiatives without major obstacles.	OA3	0.749	1.48	0.835	0.559
We regularly monitor market trends to adjust our business steps.	OA4	0.770	1.767	0.835	0.559
<b>Growth-hacking capability:</b>					
We regularly conduct small experiments (digital campaigns, content, and promos) to test marketing strategies.	GHC1	0.807	1.632	0.883	0.601
The experimental results were always measured using clear indicators or metrics.	GHC2	0.781	1.733	0.883	0.601
We regularly conduct content testing (content testing and channel testing).	GHC3	0.840	1.684	0.883	0.601
Our marketing strategies are designed and updated based on data analyses.	GHC4	0.858	1.95	0.883	0.601
We quickly changed or adjusted the strategies based on the experimental results.	GHC5	0.838	1.76	0.883	0.601
<b>Market Responsiveness:</b>					
We promptly followed up on customer feedback in a short time.	MR1	0.794	1.506	0.86	0.553
Our products and services are regularly updated based on customer feedback.	MR2	0.834	1.587	0.86	0.553
We actively monitor market trends to adjust our strategies.	MR3	0.792	1.398	0.86	0.553
Communication channels with customers (chat, social media, and email) are responded to quickly.	MR4	0.814	1.826	0.86	0.553
We update promotional strategies according to the changing market needs.	MR5	0.766	1.508	0.86	0.553
<b>Innovation Performance:</b>					
My business consistently produces or launches new products and services annually.	IP1	0.813	2.053	0.913	0.636
My business can generate new ideas that differ from those of competitors.	IP2	0.839	2.242	0.913	0.636

Item Constructs	Code	Loading	VIF	CR	AVE
Our innovations have successfully increased the number of customers.	IP3	0.853	2.395	0.913	0.636
We can accelerate the launch of new products/services faster than our competitors.	IP4	0.866	2.16	0.913	0.636
Our innovations have a significant impact on increasing sales or cost efficiency.	IP5	0.846	2.15	0.913	0.636
Our teams actively collaborate across functions (production, marketing, and digital) to develop new ideas.	IP6	0.818	1.912	0.913	0.636

In addition, we assessed the common method bias using a VIF-based collinearity diagnostic. As shown in Table 2, the VIF values ranged from 1.317 to 2.395, which is below the recommended threshold of 3.3. IP3 had the highest value (2.395); therefore, collinearity was not problematic and did not substantially affect the study results. The findings of the discriminant validity test in Table 3, using the Heterotrait-Monotrait ratio (HTMT) method, revealed that all relationships among the constructs were far below the recommended cutoff values (0.85 and 0.90). These results were verified using the Fornell-Larcker Criterion test in Table 4.

Table 3. Heterotrait-Monotrait ratio (HTMT)

	CC	DM	GHC	IP	MR	OA
CC						
DM	0.437					
GHC	0.383	0.354				
IP	0.253	0.161	0.277			
MR	0.256	0.460	0.330	0.313		
OA	0.373	0.475	0.365	0.124	0.222	

Table 4. Fornell-Larcker

	CC	DM	GHC	IP	MR	OA
CC	0.754					
DM	0.358	0.740				
GHC	0.335	0.302	0.775			
IP	0.223	0.116	0.241	0.798		
MR	0.209	0.366	0.275	0.290	0.744	
OA	0.294	0.386	0.304	0.069	0.155	0.748

#### 4.3 Structural Model Assessment

The R-squared values indicate that the endogenous variables in the model are explained to varying degrees in Table 5. For Growth Hacking Capability (GHC), an R<sup>2</sup> value of 0.176 was obtained, meaning that the predictor constructs explained 17.6% of the variance in GHC. Innovation Performance (IP), on the other hand, presents an adjusted R<sup>2</sup> of 0.100, meaning that its influencing variables can explain approximately 10% of the variance in IP based on this model. Conversely, the Market Responsiveness (MR) construct has an R<sup>2</sup> of 0.076, which means that the predictor variables may explain 7.6% of the variance in MR. The predictive relevance test reflected by Q<sup>2</sup> validates the existence of sufficient predictive power for all the endogenous constructs. All Q<sup>2</sup> values were greater than zero, suggesting that the model had an acceptable predictive performance for all endogenous variables.

Table 5. R-square and Q-square

Construct	R <sup>2</sup>	R <sup>2</sup> Adjusted	Q <sup>2</sup>
GHC	0.176	0.160	0.097

IP	0.112	0.100	0.059
MR	0.076	0.070	0.034

Although the R<sup>2</sup> values show that the explanatory power of the model is limited, the significant path coefficients indicate that the proposed relationships are theoretically meaningful. The study’s limited explanatory power may reflect its focus on three antecedents: digital mindset, collaborative capability, and organizational agility. Other capabilities, such as big data analytics, innovation, digital transformation, intellectual capital, and digital marketing, may also influence GHC and SME performance (Bresciani et al., 2024; Giordino et al., 2025; Hidayati, Siti Astuti, Kusumawati, & Iqbal, 2025). This may also stem from the peculiarities of creative-industry SMEs, which face rapidly changing customer preferences, limited resources, informal management, and uneven digital readiness. Despite the limited explanatory power, the significant path coefficients remain meaningful because they show that the digital mindset, collaborative capability, and organizational agility are GHC drivers, while GHC drives market responsiveness and innovation performance.

Table 6. Effect size f<sup>2</sup>

Relationship	f <sup>2</sup>	Effect size
Collaborative capability → GHC	0.054	Small
Digital mindset → GHC	0.022	Small
Organizational agility → GHC	0.032	Small
GHC → market responsiveness	0.082	Small
GHC → innovation performance	0.032	Small
Market responsiveness → innovation performance	0.061	Small

Table 6 presents the effect sizes for each structural relationship. The f<sup>2</sup> values (0.022–0.082) indicate small effects. GHC has the strongest influence on market responsiveness (f<sup>2</sup> = 0.082), while digital mindset has the weakest effect on GHC (f<sup>2</sup> = 0.022).

Table 7. Model fit indices

Model Fit Index	Saturated Model	Estimated Model	Interpretation
SRMR	0.079	0.091	Acceptable for saturated model
d ULS	2.889	3.825	Reported
d G	0.919	0.949	Reported
Chi-square	771.857	789.670	Reported
NFI	0.649	0.641	Moderate/limited fit

Table 7 shows the model fit indices: SRMR (saturated) = 0.079, which is acceptable (<0.08); SRMR (estimated) = 0.091, which is marginal because it exceeds 0.08 but remains below 0.10; and NFI = 0.641, indicating moderate fit. Table 8 presents the predictive assessment using the PLSpredict. Positive Q<sup>2</sup> predict values indicate that the model has predictive relevance for all indicators of GHC, market responsiveness, and innovation performance. Therefore, the model has low-to-moderate predictive ability.

Table 8. Predictive assessment using PL spredict

Indicators	Q <sup>2</sup> predict	PLS-SEM RMSE	LM RMSE	PLS-SEM MAE	LM MAE	Predictive relevance
GHC1	0.079	0.906	0.939	0.761	0.763	Yes
GHC2	0.053	0.896	0.937	0.743	0.773	Yes
GHC3	0.070	0.920	0.975	0.771	0.799	Yes
GHC4	0.089	0.920	0.983	0.786	0.826	Yes
GHC5	0.094	0.891	0.912	0.744	0.734	Yes
IP1	0.007	0.990	1.054	0.853	0.878	Yes
IP2	0.012	0.998	1.032	0.866	0.862	Yes
IP3	0.016	1.015	0.997	0.887	0.823	Yes

IP4	0.009	0.968	0.994	0.826	0.851	Yes
IP5	0.011	0.995	1.040	0.862	0.875	Yes
IP6	0.034	1.040	1.066	0.919	0.920	Yes
MR1	0.030	0.921	0.975	0.776	0.808	Yes
MR2	0.021	0.955	0.999	0.781	0.826	Yes
MR3	0.038	0.995	1.006	0.856	0.807	Yes
MR4	0.022	0.989	0.943	0.835	0.781	Yes
MR5	0.039	0.887	0.875	0.729	0.734	Yes

#### 4.4 Hypotheses Testing Results

The hypothesis testing results show that all structural paths in the model are statistically significant as can be seen in Table 9 and Figure 1. The first hypothesis demonstrates that a digital mindset has a positive effect on growth hacking capability, with a coefficient of 0.151, a t-statistic of 2.098, and a p-value of 0.036. Collaborative capability also has a significant effect on GHC, indicated by a coefficient of 0.229, t-statistic of 3.289, and p-value of 0.001. A similar pattern was observed for the third hypothesis. Organizational agility has a positive influence on GHC, supported by a coefficient of 0.179, t-statistic of 2.222, and p-value of 0.026. In  $H_4$ , GHC significantly improves market responsiveness, as shown by a coefficient of 0.275, t-statistic of 4.103, and  $p < 0.001$ . In  $H_5$ , GHC also enhances innovation performance, with a coefficient of 0.175, t-statistic of 1.997, and p-value of 0.046. Market responsiveness has a positive and significant effect on innovation performance, with a coefficient of 0.242, t-statistic of 3.057, and p-value of 0.002. The final finding examines the mediating effect. In  $H_7$ , the indirect relationship between GHC and IP through market responsiveness is significant, with a coefficient of 0.067, a t-statistic of 2.172, and a p-value of 0.030.

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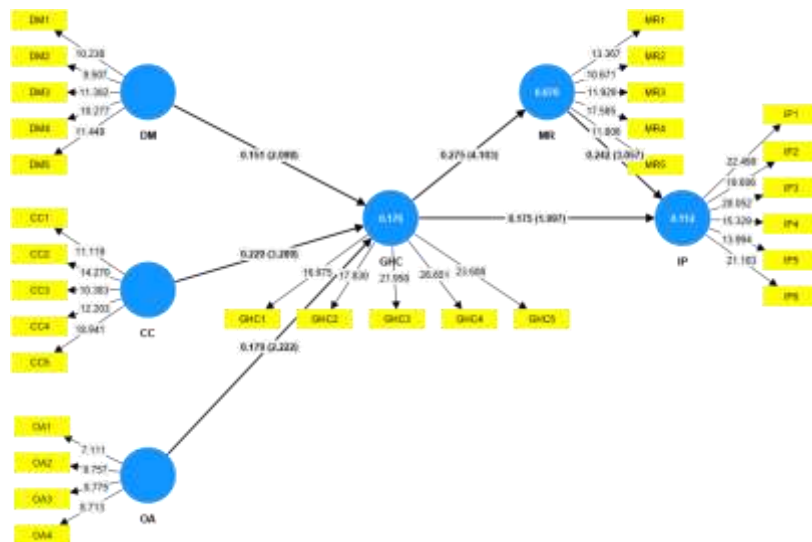


Figure 1. Structural model

Table 9. Hypotheses testing

Hypotheses	Original sample (O)	T statistics	P values	Conclusion
$H_1$ : DM → GHC	0.151	2.098	0.036	Supported
$H_2$ : CC → GHC	0.229	3.289	0.001	Supported
$H_3$ : OA → GHC	0.179	2.222	0.026	Supported

$H_4$ :	GHC → MR	0.275	4.103	0.000	Supported
$H_5$ :	GHC → IP	0.175	1.997	0.046	Supported
$H_6$ :	MR → IP	0.242	3.057	0.002	Supported
$H_7$ :	GHC → MR → IP	0.067	2.172	0.030	Supported

Table 10 shows the mediation analysis of the relationship between GHC, market responsiveness, and innovation performance. The VAF value was 27.8%, indicating partial mediation. Since both the direct and indirect effects were positive and significant, the mediation was classified as complementary partial mediation.

Table 10. Mediation Analysis

Mediation Path	Direct Effect	Indirect Effect	Total Effect	VAF	t-value	p-value	Mediation Type
GHC → MR → IP	0.175	0.067	0.241	27.8%	2.172	0.030	Complementary partial mediation

#### 4.5 Discussion

The findings indicate that growth hacking capability in creative-industry SMEs does not emerge from adopting digital technologies alone. Instead, it develops through a combination of cognitive, relational, and adaptive capabilities. A digital mindset helps SME owners and managers to recognize digital change as an opportunity for experimentation and learning. Collaboration provides SMEs access to external knowledge from partners, customers, suppliers, communities, and digital service providers. Organizational agility helps SMEs to reconfigure their resources and respond quickly to market changes. In Dynamic Capability Theory, these three capabilities reflect the microfoundations of sensing, seizing, and reconfiguring in the context of SMEs ([Hernández-Linares et al., 2021](#); [Teece, 2007](#)).

##### 4.5.1 The Effect of Digital Mindset on Growth Hacking Capability

The results indicate that a digital mindset is positively related to GHC. The results support the argument that a digital mindset is a fundamental cognitive underpinning of adaptation, data-driven decisions, and variety-seeking social practices in digital environments ([Demirel, 2024](#)). Firms with such a mindset have an increased capacity for experimentation, quick iteration, and technology learning, all of which are key components in the practice of growth hacking ([Amoozad Mahdiraji, Sharifpour Arabi, Duan, & Vrontis, 2025](#)). This finding emerged because growth hacking requires more than access to digital tools; it requires managers willing to learn from digital data and accept continuous experimentation. In creative industry SMEs, digital platforms such as social media and marketplaces are often the main channels for observing customer trends through comments and platform metrics. Therefore, SME owners or managers with a stronger digital mindset are more likely to transform digital information into growth experiments. Theoretically, this finding extends Dynamic Capability Theory (DCT) by showing that the sensing process in SMEs begins not only with formal systems but also with the digital cognition of owners and managers ([Demirel, 2024](#); [Solberg et al., 2020](#)).

##### 4.5.2 The Effect of Collaborative Capability on Growth Hacking Capability

The study suggests that collaborative capability positively affects GHC. This result agrees with what was reported by [Momeni, Martinsuo, and Härkälä \(2024\)](#), explaining how collaboration between SMEs and their digital service suppliers builds a company’s digital capacity and facilitates solution testing. This finding can be explained by SMEs’ resource constraints. Creative-industry SMEs often lack in-house expertise, technology, market data, and financial resources to conduct growth experiments independently. SMEs gain external knowledge from customers, partner organizations, and digital partners, which helps offset limited internal expertise and funds. Collaboration helps SMEs absorb external knowledge through growth-oriented experiments. Theoretically, this finding enriches Dynamic Capability Theory by showing that SMEs seize opportunities by mobilizing external relationships and

ecosystem resources, not only through internal capabilities ([Lu et al., 2024](#); [Najafi-Tavani, Najafi-Tavani, Naudé, Oghazi, & Zeynaloo, 2018](#)).

#### *4.5.3 The Effect of Organizational Agility on Growth Hacking Capability*

The results show that organizational agility positively influences growth-hacking capability. This finding is consistent with [H. Zhang, Ding, and Xiao \(2023\)](#), who proved that agile companies speed up their digital transformation and outperform others in leveraging new data and advanced technologies, which is key to developing successful growth-hacking tactics ([Manalu & Adzimatunur, 2024](#)). At the tactical level, agility supports companies in determining and prioritizing improvement initiatives that facilitate iterative experimentation ([Fulea, Mocan, Dragomir, & Murar, 2023](#)). This finding emerged because growth hacking requires quick action once a market opportunity is identified. In creative industries, visual trends and product designs can shift rapidly. Agile SMEs can redesign products, change communication strategies, and reallocate resources more quickly than less flexible firms. This finding is theoretically significant because it positions organizational agility as the reconfiguring microfoundation of GHC.

#### *4.5.4. The Effect of Growth Hacking Capability on Market Responsiveness*

According to these results, growth-hacking capability positively affects market responsiveness. This finding is in agreement with [Santoro et al. \(2024\)](#), who contend that growth hacking promotes data-backed decision-making using big data analytics. This method enables businesses to quickly adapt to changing market trends and customer preferences. Growth hacking improves market responsiveness by creating a continuous feedback loop between firms and the market. By analyzing customer data and iterating quickly, SMEs can detect changes in customer preferences and respond more rapidly. This relationship is particularly important for Indonesian creative SMEs because many firms rely on social media trends, online customer interaction, and marketplace feedback to understand demand changes. Theoretically, this finding enriches the GHC literature by showing that GHC is a tool for rapid growth and a capability that strengthens firms' responsiveness to market changes ([Bargoni, Smrčka, et al., 2024](#); [Troisi et al., 2020](#)).

#### *4.5.5 The Effect of Growth Hacking Capability on Innovation Performance*

This finding reveals the positive impact of growth hacking capabilities on innovation performance. This aligns with the findings of [Gerlich et al. \(2025\)](#), who stated that growth hacking encourages rapid, low-cost experimentation in product design, marketing campaigns, and customer retention. [Bargoni, Smrčka, et al. \(2024\)](#) also support this view, explaining that growth hacking relies on repeated, data-driven experimentation. Because GHC supports innovation through low-cost experimentation and rapid validation, creative industry SMEs do not always need large R&D investments to innovate. Innovation can occur through design changes, menu tweaks, packaging updates, promotional content, customer engagement, or digital sales approaches. The GHC allows SMEs to test these ideas quickly and reduce the risk of launching innovations that do not fit customer needs. Theoretically, this finding enriches the GHC literature by extending its outcomes beyond growth, financial performance, and market performance to innovation performance.

#### *4.5.6 The Effect of Market Responsiveness on Innovation Performance*

This study identified a positive impact of market responsiveness on innovation performance. This result is consistent with the study by [Khan, Ali, Xiaobao, and Zhiying \(2024\)](#), which shows that market responsiveness is the main source of innovation in business models because responsive firms tend to capture customers' needs and are involved in the process of new product development. Creative industries such as culinary arts, fashion, crafts, design, and digital services rely on customer preferences, where innovation will be beneficial if it aligns with customer tastes and market trends. Market responsiveness helps SMEs identify what customers want, evaluate whether existing offerings remain relevant, and adjust innovation activities accordingly. Theoretically, this finding supports the view that market responsiveness serves as a conversion capability that turns market knowledge into innovation outcomes ([Agyapong et al., 2024](#); [Wahyuni & Sara, 2020](#)).

#### *4.5.7 The Mediating Role of Market Responsiveness*

The study found that market responsiveness mediates the relationship between growth-hacking capability and innovation performance. This mediation occurs because growth hacking generates data-driven insights; however, the ability to translate these insights into valuable innovations depends on a company's level of responsiveness to market changes. [Lisbet, Al Faroqi, Evelynna, and Prihadi \(2024\)](#) assert that market responsiveness ensures that growth-hacking strategies and experiments can be effectively directed to meet consumer needs, thereby reducing the risk of irrelevant innovation. The mediation results explain why GHC does not directly translate into innovation performance. Growth hacking can yield data and insights, but these only become valuable when SMEs pick up market signals and convert them into relevant innovations. Market responsiveness translates experiments into innovative solutions. In Indonesian creative-industry SMEs, rapidly shifting customer tastes and limited resources mean that firms must quickly turn small experiments into viable products. Theoretically, this clarifies how GHC improves innovation by enabling market-focused actions.

#### *4.5.8 Theoretical and Contextual Implications*

These findings have several theoretical implications. First, this study extends Dynamic Capability Theory by identifying digital mindset, collaborative capability, and organizational agility as complementary microfoundations of GHC in SMEs. A digital mindset functions as a cognitive microfoundation that enables opportunity detection in digital environments. Collaborative capability serves as a relational microfoundation that helps SMEs access knowledge and mobilize resources. Organizational agility acts as an adaptive microfoundation that helps SMEs reconfigure resources and make rapid strategic changes. Second, this study enriches the GHC literature by conceptualizing GHC as something more than a data-driven marketing mechanism.

This study shows that GHC is influenced by the digital mindset, collaborative capability, and organizational agility. It contributes to innovation performance directly and indirectly through market responsiveness, thus explaining both the impact of GHC and how it is formed and translated into innovation outcomes. Third, the findings have important contextual implications for Indonesian SMEs. Many SMEs in Indonesia face limited resources, uneven digital readiness, and strong pressure to compete on digital platforms. Because many firms lack budgets and digital skills, GHC helps them test ideas cheaply and build digital learning. Fourth, the findings are also relevant for creative sectors because they must update products, content, branding, and customer engagement strategies quickly to follow shifting trends and customer demand.

Culinary, fashion, craft, design, and digital SMEs operate in sectors that are trend-sensitive and dependent on rapid innovation. Finally, this study shows how SMEs in emerging economies compete using limited formal resources. In emerging economies, advanced analytics, innovation infrastructure, and formal resources may be limited. Consequently, SMEs often depend on owner-manager cognition, informal collaboration, agility, and market responsiveness to compete. Therefore, the results broaden the application of Dynamic Capability Theory by showing how dynamic capabilities are enacted in resource-constrained, digitally evolving and market-volatile SME contexts

## **5. Conclusions**

### **5.1 Conclusion**

This study concludes that growth hacking capability (GHC) is not merely a digital marketing practice but an organizational capability that enables creative industry SMEs to absorb digital information, conduct rapid experimentation, adapt to market changes, and transform customer insights into innovative solutions, including potentially patentable outputs. The findings indicate that digital mindset, collaborative capability, and organizational agility are key drivers in developing GHC, while market responsiveness plays an important role in translating GHC into innovation performance. Overall, GHC serves as a strategic mechanism that integrates learning, collaboration, and agility to enhance SME innovation outcomes.

### **5.2 Research Limitations**

This study has several limitations. The model explains only part of the variance in GHC, market responsiveness, and innovation performance, while other factors such as firm age, industry differences,

access to finance, leadership support, and market dynamism were not included. In addition, the contextual focus on creative SMEs limits broader generalizability to other sectors or economic contexts.

### **5.3 Suggestions and Directions for Future Research**

Future research may incorporate additional variables such as entrepreneurial orientation, absorptive capacity, digital marketing capability, financial resources, leadership support, market dynamism, firm size, and firm age to improve explanatory power. Comparative studies across regions or emerging economies are also recommended to enhance external validity and provide deeper insight into how GHC operates under different contextual conditions.

### **Acknowledgements**

The authors would like to express their appreciation to the Research, Community Service, and Intellectual Capital Bureau (Biro P2M) of Universitas Widayatama for the support provided through Contract Number 002/HPW/P2M-UTAMA/VII/2024 dated July 29, 2024.

### **Author Contributions**

FM was responsible for conceptualization, methodology, formal analysis, and drafting the manuscript. RH contributed to validation, review and editing, and final approval of the manuscript. All the authors approved the final version of the manuscript.

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