ISBN: 978-628-96613-2-3. ISSN: 2414-6390. Digital Object Identifier: https://dx.doi.org/10.18687/LEIRD2025.1.1.1000

Development of a Personalized Virtual Gallery Platform using Lean Startup, Corporate Branding and Artistic Branding

Johana Daniel Alvarado Almora1[1]; Lucero Catherine Fernanda Cuisano Quispe[2]; Rosa Karol Moore Torres[3]
[1,2,3]*Peruvian University of Applied Sciences (UPC), Perú,* u201715249@upc.edu.pe, u20201b883@upc.edu.pe, pcgekmoo@upc.edu.pe

Abstract*– In a highly competitive business environment, many small and medium-sized enterprises (SMEs) face challenges in building a strong and distinctive corporate identity. This article presents the development of a personalized virtual gallery digital platform that integrates art, branding, and innovation as a proposal to strengthen the visual and symbolic identity of SMEs. Based on the Lean Startup approach, a digital business model is designed that allows for validation through iterative cycles (build-measure-learn), offering a creative solution tailored to the real needs of the target audience. The platform combines personalized artistic works with strategic consulting in corporate identity, thus facilitating the creation of a coherent and meaningful brand image. Aimed especially at entrepreneurs in Metropolitan Lima, this proposal seeks not only to improve the visual presence of their brands but also to promote an organizational culture more aligned with their values. Overall, this solution proposes a new way to integrate art as a strategic tool in business, offering a scalable and adaptable alternative that contributes to the competitiveness and differentiation of SMEs in today's market.

Keywords-- Lean Startup, Corporate identity, Branding, Virtual Gallery, SME

I. Introduction

In today's dynamic and increasingly competitive business environment, small and medium-sized enterprises (SMEs) face the constant challenge of adapting, differentiating themselves, and consolidating their market presence. The business landscape in Lima is highly fragmented, with sectors such as corporate services, real estate, and professional consulting experiencing continuous growth, yet also saturated with supply. According to the National Institute of Statistics and Informatics (INEI), during the fourth quarter of 2024, the number of registered companies reached 3,537,639—an increase of 6.9% compared to the same period the previous year [18]. This reflects an expanding business environment that simultaneously faces significant challenges in differentiating its offerings and positioning in competitive markets. A study showed that a strong brand can increase a customer's willingness to pay by up to 23%, highlighting the need for SMEs to incorporate branding as a strategic pillar in their business models [21].

In this context, there is a growing need to adopt agile approaches that enable SMEs to validate innovative solutions without taking on excessive financial risks. The Lean Startup methodology has proven effective in reducing uncertainty and optimizing product–market fit through iterative validation cycles [30], [40]. While its application has expanded across various sectors and types of digital businesses, its use in visual branding strategies and the development of corporate identity remains largely unexplored [3]. Therefore, this study aims to demonstrate that the implementation of Lean Startup can strengthen the corporate identity of SMEs through a virtual gallery that translates brand values into digital art validated by real users. This approach is justified because, unlike traditional graphic design methodologies, it incorporates feedback from the target audience from early stages, allowing for the adaptation of visual elements to the audience's authentic perceptions [11]. This research applies an agile validation method to branding challenges in Lima's service-sector SMEs, showing how iterative, user-centered practices can enhance creative processes and offer a competitive, adaptable branding tool.

II. State Of The Art

Theoretical Foundation of the Proposed Model: The Lean Startup methodology, introduced by Ries and later expanded, guides business creation under uncertainty through validated learning and continuous experimentation [17]. It follows the Build–Measure–Learn cycle, using Minimum Viable Products (MVPs) to test ideas with users and adjust based on feedback [4]. Recent studies note that MVP quality and modular design are key for scaling digital startups [23]. Digital tools accelerate validation in models like the one proposed here [16]. In this study, Lean Startup is applied to a virtual gallery for micro and small enterprises (MSEs) in Lima to enhance corporate identity and reduce early-stage uncertainty [40]. The approach enables quick iteration, personalization, and lower risk. Digital branding adds value, especially when supported by innovation and adaptability [31], [8], [13].

Corporate Identity - Definition and Key Dimensions: Corporate identity encompasses visual, communicational, and symbolic elements that express an organization's values and uniqueness [2]. It includes logos, colors, and typography, as well as culture and brand narrative [33]. In SMEs, it is both a strategic and emotional tool [2], and can drive innovation beyond aesthetics [12].

Indicators for Measuring Corporate Identity: Effectiveness is measured through indicators like brand recall, visual coherence, symbolic alignment, and perceived authenticity [27]. For SMEs, it is important to integrate visual and symbolic dimensions [24] and assess digital presence and design support [9], [22]. Methodologically, Likert scales are common for evaluating elements like "brand recognition" or "image–value

alignment," supported by surveys, interviews, and visual audits [38].

TABLE 1
PERCEIVED VISUAL COHERENCE INDEX INDICATOR

1	Name: Perceived Visual Coherence Index Indicator		
2	Objective: To measure the perception of coherence between the visual elements of a brand before and after the MVP.		
3	Calculation formula: $PVII = (Average\ responses\ Post\ MVP\ (P9)\ /\ 5)\ x\ 100$		
4	Reference levels	Color:	Interpretation:
		Green	High visual coherence (>=85%)
		Yellow	Acceptable coherence (70%-84%)
		Red	Low visual coherence (<70%)

TABLE 2
BRAND RECOGNITION INDEX INDICATOR

1	Name: Brand Recognition Index (BRI)		
2	Objective: To evaluate whether the MVP improves the target audience's perception of brand recognition.		
3	Calculation formula: $BRI = (Average\ responses\ Post\ MVP\ (P10)\ /\ 5)\ x\ 100$		
4	Reference levels	Color:	Interpretation:
		Green	High visual coherence (>=85%)
		Yellow	Acceptable coherence (70%-84%)
		Red	Low visual coherence (<70%)

III. CONTRIBUTION

This study makes a significant contribution by demonstrating the feasibility of applying the Lean Startup methodology to the creation and validation of digital solutions aimed at strengthening the corporate identity of SMEs—an area that has traditionally not been systematically addressed through this agile approach [17]. The proposal of a personalized virtual gallery, developed under corporate branding principles and validated through iterative cycles of validated learning, shows how digital art can become a strategic resource.

This methodological approach is supported by recent research. For instance, Ref. [28] highlights how Lean Startup promotes innovative behavior among female entrepreneurs, while Ref. [32] emphasizes its capacity to respond to uncertainty through iterative learning and prediction. Likewise, studies in [39] and [14] confirm that using the Lean Canvas improves the structure and validation of emerging business models such as virtual galleries. In line with Ref. [7], this research demonstrates that agile principles can be successfully applied in creative and non-technological fields such as artistic branding.

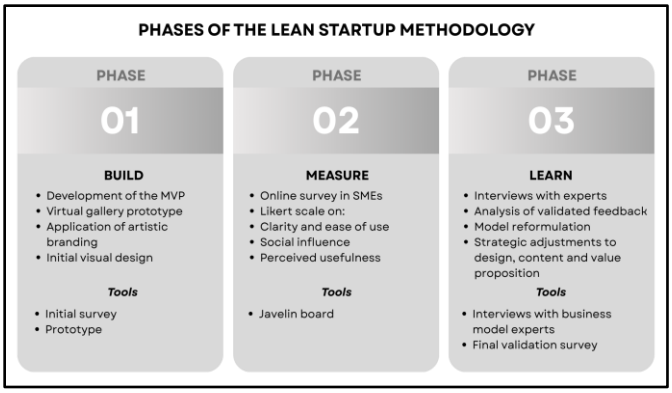

Fig. 1 Methodology Framework.

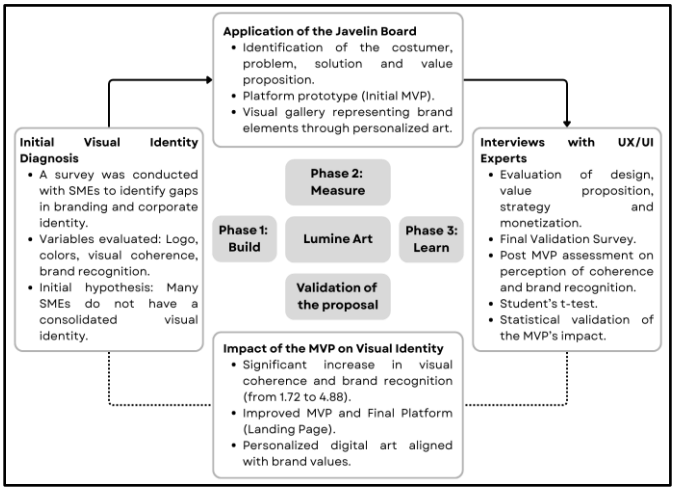

Fig. 2 Corporate Identity Validation Process in SMEs Using the Lean Startup Methodology.

The methodology comprises the following three key phases:

A) Phase 1: Build

Initial Survey: Prior to MVP development, a diagnostic survey was conducted with 50 SME entrepreneurs in Metropolitan Lima to assess the use of visual identity and branding strategies.

Fig. 3 Diagnostic Questionnaire.

The hypothesis proposed that the absence of a strong visual identity limits competitive positioning. Using Google Forms, the survey gathered quantitative data that helped validate the need for a personalized virtual gallery, supporting its relevance as a strategic branding tool for emerging businesses.

The key variables were operationalized through specific indicators, measured using a five-point Likert scale with the following values: 1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree.

The following questions were formulated:

1. Is your company formally registered with SUNARP or SUNAT?
2. How many years has your company been operating?
3. In which sector does your company primarily operate?
4. My company has a defined and professional logo.
5. We have established institutional colors and a standard typeface.
6. We have worked on a visual identity or branding strategy.
7. We use art and design as part of our business communication.
8. My company's image clearly reflects our values.
9. I consider my company's visual identity to be coherent.
10. Our customers easily recognize our brand.
11. Visually, we stand out from our competitors.
12. We have received professional advice on branding or graphic design.
13. We consider visual design an important part of our commercial strategy.
14. Our communication on social media has its own distinctive visual style.
15. We have visual materials that effectively convey our brand.

Platform Prototype: Creating a preliminary version of the platform allows for iterative improvements. Lean Startup cycles have proven effective in enhancing user experience, as demonstrated in [20], where a virtual gallery was validated and refined through three design rounds with real users.

B) Phase 2: Measure

Javelin Board: The Javelin Board helps identify the target customer, formulate hypotheses, design experiments, and capture insights [40]. It supports validated learning within the Build–Measure–Learn cycle of Lean Startup through tools such as surveys, interviews, and landing page tests.

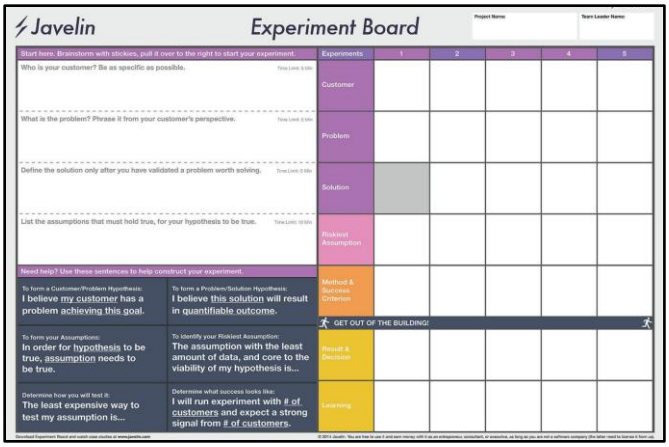

Fig. 4 Javelin Board Canvas.

C) Phase 3: Learn

Expert Interviews: The qualitative validation of the improved MVP involved expert judgment to assess usability, visual coherence, and strategic value. This method offered professional insights and identified potential issues, ensuring the gallery's real-world applicability [25]. The process included preparation, coordination, interviews, analysis, and implementation.

TABLE 3
INTERVIEW PRESENTATION AND QUESTIONS

Presentation	Questions
Thank you for agreeing to participate in this interview. Your experience in digital innovation and UX/UI design is key to validating our minimum viable product (MVP): a personalized virtual gallery that combines art, branding, and artificial intelligence to strengthen corporate identity for SMEs in Metropolitan Lima. Your responses will help refine the proposal before launch. Context: We seek to align our platform with the values, vision, and strategy of each SME through artistic representations and personalized visual design, generating a positive impact on their corporate identity, positioning, and emotional connection with their audiences. Procedure: You will be presented with a series of evaluative questions using a Likert scale (1: Strongly disagree - 5: Strongly agree). Your additional comments will also be very valuable. Confidentiality: Responses will be confidential and used only for product improvement purposes. They will not be shared with third parties. Acknowledgment: We deeply value your time and expertise. Thank you very much! [Expert Introduction]	1. UX Approach: How would you rate the features described in the MVP? (Likert Scale: 1-5) 2. Perceived Value: To what extent do you perceive the MVP provides clear value for users? (Likert Scale: 1-5) 3. Launch Strategy: What is your opinion on the MVP's launch strategy? (Likert Scale: 1-5) 4. Monetization: Do you consider a monetization model based on payments for custom visual identity services or commissions for the sale of artwork to be appropriate for this type of platform aimed at SMEs? (Likert Scale: 1-5)

Final Validation Survey: After developing the Lumine.Art MVP, a validation phase was conducted to assess its impact on SMEs' visual identity. A survey measured participants' understanding, acceptance, and perceived usefulness after

interacting with the virtual gallery. For this phase, the following hypothesis is to be validated: The personalized virtual gallery proposal improves the perception of coherence in the visual identity of SMEs.

To collect the necessary data, an online survey was designed and administered to a sample of 50 Peruvian entrepreneurs, selected based on their involvement with emerging businesses. The survey was distributed via Google Forms platform and provided quantitative data that served as the foundation for validating the value proposition of the personalized virtual gallery.

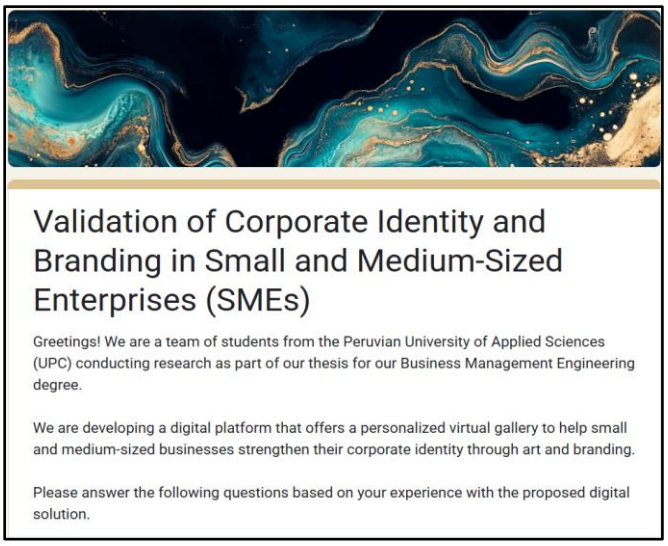

Fig. 5 Validation Questionnaire on Corporate Identity and Branding in SMEs.

The key variables are operationalized through specific indicators, measured using a five-point Likert scale with the following values: 1 = Strongly disagree; 2 = Disagree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree.

The survey questions were as follows:

1. Were you able to view the personalized virtual gallery proposal?
2. Did you understand that this solution aims to improve your company's corporate identity?
3. Are you interested in innovative solutions that strengthen your brand image?
4. The virtual gallery helps improve my company's corporate identity.
5. The virtual gallery allows my company to visually project its values.
6. I find it useful to have personalized artworks aligned with my brand.
7. The proposal visually differentiates my company from others.
8. The artworks presented effectively reflect my brand's values.
9. I consider my company's corporate identity to be coherent.
10. Our clients can easily recognize our brand.
11. I believe the proposal is innovative compared to traditional branding methods.
12. I would be willing to invest in this type of visual solution for my company.

IV. Results and Discussions

This section presents the Lean Startup validation of Lumine.Art using the Build–Measure–Learn cycle [15]. Tools helped test hypotheses and extract insights [28], [30]. Results show improved visual identity and alignment with agile branding [35] through iterative learning and pivots [26], [40].

A) Phase 1: Build – Visual Identity Diagnosis and MVP Design Results

A diagnostic survey revealed that many SMEs lacked structured visual identity elements such as logos, brand manuals, and consistent design, limiting their brand differentiation.

To address this, an MVP was developed: a personalized virtual gallery using realistic digital art to reflect each company's values. Its design prioritized consistency in logos, colors, slogans, and graphics, following user-centered design principles.

Initial Survey: Corporate Identity Diagnosis in SMEs

A diagnostic survey was conducted among SMEs in Lima to assess visual identity practices and branding strategies. It analyzed elements like colors, typography, and art use, using descriptive statistics to inform the MVP design and identify improvement areas

Business Profile: Findings show that 80% of the SMEs are formally registered (SUNAT/SUNARP), while 20% operate informally. Regarding business age, 60% have been active 1–3 years, 34% over 3 years, and 6% less than 1 year—highlighting early-stage ventures prone to branding challenges [1].

In terms of economic activity, 50% operate in coaching and consulting, 38% in corporate services, 10% in other sectors, and 2% in real estate—revealing diverse visual identity needs.

TABLE 4
Demographic Characteristics of Respondents

Variable	Level	Quantity	%
Company formal registration	Yes	40	80%
	No	10	20%
Company age	Less than 1 year	3	6%
	Between 1 and 3 years	30	60%
	More than 3 years	17	34%
Main economic sector	Real state	1	2%
	Coaching / Consulting	25	50%
	Corporate services	19	38%
	Other (specify)	5	10%

Visual Identity and Branding Assessment (Pre-MVP Phase): A 15-item Likert-scale survey was applied to assess

SMEs' use and perception of visual branding. Results revealed low professionalization: only 26% reported having a professional logo, while 50% disagreed or strongly disagreed.

Furthermore, 64% did not use art or design in their brand communication—reflecting a broader trend of underutilized visual resources in Latin American microenterprises [9], [37].

About 60% perceived their visual identity as incoherent, and over 64% believed their brand was not easily recognized—issues tied to the lack of strategic branding in SMEs [22].

TABLE 5
RESULTS OF THE DIAGNOSTIC SURVEY ON CORPORATE IDENTITY IN SMES (PRE-MVP PHASE)

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Defined and professional logo	7	18	12	10	3
Institutional colors and typography	5	14	18	10	3
Corporate identity or branding strategy	8	12	18	8	5
Use of art and design in communication	5	22	12	10	3
Image reflects values	6	11	16	14	3
Coherent corporate identity	4	10	17	18	1
Clients recognize the brand	10	20	21	14	0
Visually stands out from competition	7	17	20	14	2
Professional advice on branding/design	4	7	17	18	4
Visual design aligned with commercial strategy	4	7	20	15	4
Own style on social media	5	7	16	20	2
Adequate visual materials	4	16	27	5	3
Average % per category	10,9%	30,6%	35,5%	18,1%	4,9%

Integration of Visual Design into Business Strategy: There was a modest improvement in aligning visual design with commercial strategy. In Question 13, 38% agreed that graphic design is part of their strategy, though 50% remained neutral or disagreed—indicating persistent misalignment. This is relevant, as design plays a key role in value creation and brand differentiation [31]. Additionally, 30% of respondents (Question 12) had never received professional branding or design advice, highlighting the need for accessible visual support from early stages. Personalized tools like the virtual gallery can help address this gap. These findings echo Ref. [37], which notes that digital brand management remains a major challenge for SMEs.

Platform Prototype:

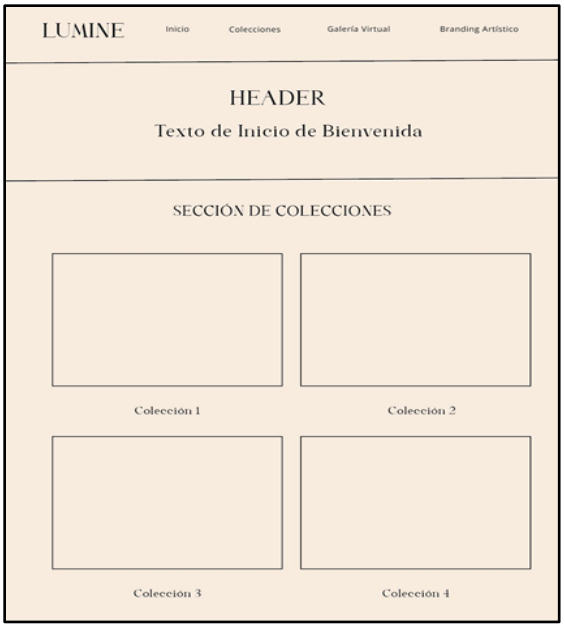

Fig. 6 Initial Prototype.

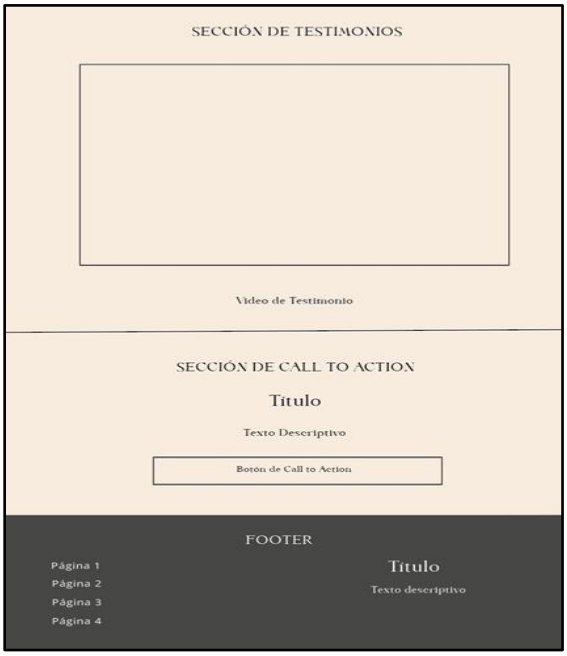

Fig. 7 Initial Prototype.

B) Phase 2: Measure

Javelin Board: For Lumine.Art, it helped guide MVP adaptation and identify improvements aligned with SME visual needs. Its integration supported team alignment and iterative progress. As highlighted in [29], digital innovation requires active feedback—reflected here through the Javelin Board and expert interviews. Aligned with the Lean Startup cycle, this tool enabled early validation of the value proposition's fit with the target market [40].

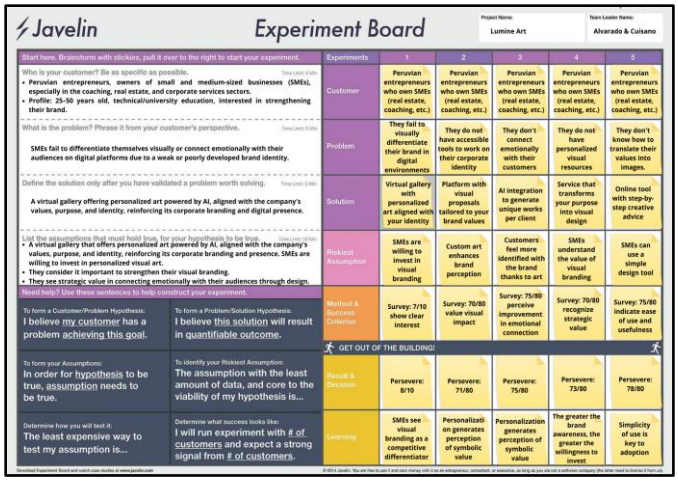

Fig. 8 Javelin Board.

YouTube link to the interview conducted for the validation of the Javelin Board (YouTube): https://youtu.be/b8SZTWoq7qE

C) Phase 3: Learn

As evidence accumulated from user feedback and hypothesis testing, an ongoing learning process enabled the refinement of key aspects of the Lumine.Art platform. Adjustments were made to the visual value proposition and strategy to better match user needs and market conditions.

Technical Validation of the Improved MVP

Expert Interviews: Two specialists in digital innovation and UX/UI design were interviewed to evaluate the gallery's visual, functional, and strategic aspects. Their insights led to a more coherent and effective MVP, tailored to entrepreneurs aiming to enhance their brand through personalized digital art. Below are the results of the expert interviews conducted to validate the MVP.

TABLE 6
INTERVIEW 1 RESULTS

Interview 1: Software engineer specializing in web development and UX, with over four years of experience creating digital platforms for SMEs. Currently a web developer at an independent agency.					
Question	Rating				
	1	2	3	4	5
UX Focus: How would you rate the features described as being included in the MVP?					X
Perceived Value: To what extent do you feel the MVP provides clear value for users?					X
Launch Strategy: What is your opinion on the MVP's go-to-market strategy?				X	
Monetization: Do you think a monetization model based on payments for custom visual identity services or commissions for artwork sales is appropriate for this type of platform aimed at SMEs?					X

NOTE: THE TABLE SHOWS THE SCORES GIVEN BY THE EXPERT IN INTERVIEW 1. YOUTUBE LINK TO INTERVIEW 1: HTTPS://YOUTU.BE/_WXGFVGWLYA

TABLE 7
INTERVIEW 2 RESULTS

Interview 2: Systems Engineer specializing in UX/UI, with over four years of experience designing user experiences as a UX/UI Designer. Currently a Service Designer in the healthcare sector.					
Question	Rating				
	1	2	3	4	5
UX Focus: How would you rate the features described as being included in the MVP?			X		
Perceived Value: To what extent do you feel the MVP provides clear value for users?				X	
Launch Strategy: What is your opinion on the MVP's go-to-market strategy?			X		
Monetization: Do you think a monetization model based on payments for custom visual identity services or commissions for artwork sales is appropriate for this type of platform aimed at SMEs?					X

NOTE: THE TABLE SHOWS THE SCORES GIVEN BY THE EXPERT IN INTERVIEW 2. YOUTUBE LINK TO INTERVIEW 2: HTTPS://YOUTU.BE/ATCMV7KOQIQ

Expert Interview Results Summary:

a. UX Approach: Scored 4.0, indicating a functional and audience-appropriate design, with room for minor improvements.
b. Perceived Value: Scored 4.5, supporting the hypothesis that the solution effectively addresses a real market need.
c. Launch Strategy: Received the lowest (but still positive) score, suggesting the need to refine segmentation, timing, or communication channels.
d. Monetization: Achieved the highest score (5.0), confirming the model's economic viability and alignment with SME behavior.

Final Validation Survey: After developing the MVP, a final survey was conducted to assess user understanding, acceptance, and perceived usefulness of the solution. The results were statistically analyzed, providing key insights into the model's effectiveness and the proposal's relevance to SMEs.

TABLE 8
VISUALIZATION, COMPREHENSION, AND INTEREST VARIABLES

Variable	Level	Quantity	%
Visualization of the virtual gallery proposal	Yes	50	100%
Understanding the goal of improving their company's corporate identity	Yes	50	100%
Interest in innovative solutions that strengthen their brand image	Yes	43	86%
	No	0	0%
	Maybe	7	14%

TABLE 9
VALIDATION QUESTIONNAIRE RESULTS ON CORPORATE IDENTITY AND BRANDING IN SMALL AND MEDIUM-SIZED ENTERPRISES (SMES) – POST-MVP

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The virtual gallery improves corporate identity	1	2	7	32	8
The gallery helps visually project brand values	1	2	7	33	7
Personalized artwork aligned with the brand is useful	0	4	4	27	13
The proposal visually differentiates the company	1	2	8	27	6
The artworks reflect the brand's values	0	1	9	28	10
The corporate identity is well defined and structured	0	1	8	30	9
Clients easily recognize the brand	1	1	8	28	12
Innovative proposal compared to traditional methods	1	1	2	29	17
Willingness to invest in the proposed solution	2	1	25	15	7
Average % per category	2,4%	4,2%	19,1%	57,6%	16,7%

Final Survey Results and Hypothesis Testing. The survey conducted with 50 SMEs showed a highly positive evaluation of the MVP:

a. 80% believed the virtual gallery improved their corporate identity.
b. 78% felt it enhanced their brand's visual differentiation.
c. 60% expressed willingness to invest in the solution, indicating strong commercial acceptance.

These results confirm that personalized digital art can significantly strengthen SME brand identity in digital environments, aligning with [2], which emphasizes the value of coherent identity in competitive markets like Lima.

A Student's t-test comparing pre- and post-MVP responses showed a significant improvement in perceived visual coherence, supporting the solution's impact. This result echoes the findings in [36], which note that effective digital branding improves brand perception and engagement.

General Hypothesis (Perception Level):

H_0: No significant change in visual identity perception before and after using the MVP.

H_1: Significant change in visual identity perception after using the MVP.

-Specific Hypotheses:

Question 9 – "I consider my company's visual identity to be coherent"

H_0: No difference in average responses between pre- and post-MVP groups.

H_1: Significant difference in average responses, indicating improved visual coherence.

Question 10 – "Our clients easily recognize our brand"

H_0: No difference in brand recognition perception pre- and post-MVP.

H_1: Significant improvement in brand recognition after MVP use.

Results:

TABLE 10
RESULTS

Empresario	Grupo	P9	P10
1	Pre MVP	1	1
2	Pre MVP	1	1
3	Pre MVP	1	2
4	Pre MVP	2	2
5	Pre MVP	1	2
6	Pre MVP	2	1
7	Pre MVP	1	3
8	Pre MVP	1	2
9	Pre MVP	1	3
10	Pre MVP	3	2
11	Pre MVP	1	3
12	Pre MVP	2	1
13	Pre MVP	2	2
14	Pre MVP	2	2
15	Pre MVP	1	3
16	Pre MVP	3	2
17	Pre MVP	3	2
18	Pre MVP	1	1
19	Pre MVP	2	2
20	Pre MVP	3	1
21	Pre MVP	3	2
22	Pre MVP	1	3
23	Pre MVP	1	1
24	Pre MVP	1	1
25	Pre MVP	3	2
26	Post MVP	5	5
27	Post MVP	5	5
28	Post MVP	5	5
29	Post MVP	5	5
30	Post MVP	5	5
31	Post MVP	5	5
32	Post MVP	5	5
33	Post MVP	5	5
34	Post MVP	5	5
35	Post MVP	5	5
36	Post MVP	5	5
37	Post MVP	5	5
38	Post MVP	5	5
39	Post MVP	4	4
40	Post MVP	4	4
41	Post MVP	5	5
42	Post MVP	5	5

43	Post MVP	5	5
44	Post MVP	5	5
45	Post MVP	5	5
46	Post MVP	5	5
47	Post MVP	5	5
48	Post MVP	5	5
49	Post MVP	5	5
50	Post MVP	4	3

	Variable 1	Variable 2
Mean	1.72	4.88
Variance	0.71	0.11
Observations	25	25
Pooled Variance	0.41	
Hypothesized Mean Difference	0	
Degrees of freedom	48	
t Stat	-17.448181	
P(T<=t) one-tail	1.019E-22	
t Critical one-tail	1.6772242	
P(T<=t) two-tail	2.038E-22	
t Critical two-tail	2.0106348	

Fig. 9 Question 9 – t-test for two samples assuming equal variances.

	Variable 1	Variable 2
Mean	1.88	4.84
Variance	0.5266667	0.2233333
Observations	25	25
Pooled Variance	0.375	
Hypothesized Mean Difference	0	
Degrees of freedom	48	
t Stat	-17.089568	
P(T<=t) one-tail	2.412E-22	
t Critical one-tail	1.6772242	
P(T<=t) two-tail	4.823E-22	
t Critical two-tail	2.0106348	

Fig. 10 Question 10 – t-test for two samples assuming equal variances.

Specific Hypotheses (Post-MVP)
Pre-MVP Mean: 1.72
Post-MVP Mean: 4.88
Variances: 0.71 (Pre), 0.11 (Post)
Sample Size: 25 per group

The average perception increased significantly after MVP exposure (from 1.72 to 4.88), indicating a substantial improvement in brand recognition.

t-Test Results
Question 9 (Visual Coherence):
p = 2.038E-22, well below the 0.05 threshold → statistically significant
Question 10 (Brand Recognition):
p = 4.823E-22, also far below 0.05 → statistically significant

Conclusion: In both cases, the null hypothesis is rejected. The MVP significantly improved perceptions of visual identity and brand recognition.

Interpretation of Results (Student's t-test): The mean scores rose from 1.72 to 4.88 (Likert scale 1–5), confirming a notable positive shift after MVP implementation. Equal sample sizes (n=25) and acceptable variances support the reliability of the t-test, validating the MVP's effectiveness in enhancing branding.

Quantitative Diagnosis of Corporate Identity in SMEs
The Pre-MVP diagnosis revealed major deficiencies:
- ➢ Perceived Visual Coherence Index (PVCI): 40%
- ➢ Brand Recognition Index (BRI): 36%

These low scores confirm the literature's findings on branding weaknesses in Latin American SMEs [9], [37], [40], supporting the need for strategic design interventions.

Quantitative Diagnosis of Visual Identity in SMEs
To validate the model's relevance, two key indicators were calculated using pre-MVP survey data from 50 SMEs in Lima. The Perceived Visual Coherence Index (PVCII) evaluates the degree of alignment between the brand's graphic elements. It is calculated as follows:

$$PVII = (Average\ responses\ Post\ MVP\ (P9)/5)x100 \quad (1)$$

Post-MVP Average Response (Q9)" represents the mean of responses to Question 9. Since 60% do not perceive coherence, an average score of 2.0 was estimated, resulting in:

$$PVII = (2.0/5)x100 = 40\% \quad (2)$$

The Brand Recognition Index (BRI) measures how easily customers identify the brand.

$$BRI = (Average\ responses\ Post\ MVP\ (P10)/5)x100 \quad (3)$$

With 64% negative responses, an average score of 1.8 was estimated.

$$BRI = (1.8/5)x100 = 36\% \quad (4)$$

The improved MVP was developed using mock-ups to guide design and user experience, supporting early validation [5].

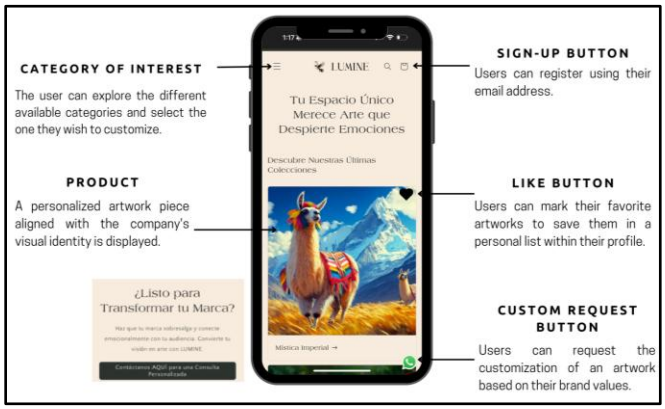

Fig. 11 Platform Mock-up.

This approach enabled hypothesis testing and iteration, aligned with Lean Startup principles [4], and reinforced SME branding through co-creation [6].

Landing Page as MVP: To validate SME interest in personalized visual solutions, a landing page was developed as the MVP for Lumine.Art. This page not only presented the value proposition but also gathered data on user preferences and expectations—key inputs for refining the business model. The project's adaptability to customer feedback reflects principles of agile marketing, essential for branding in digital startups [35]. Official link to the virtual gallery: https://www.lumine-art.com/

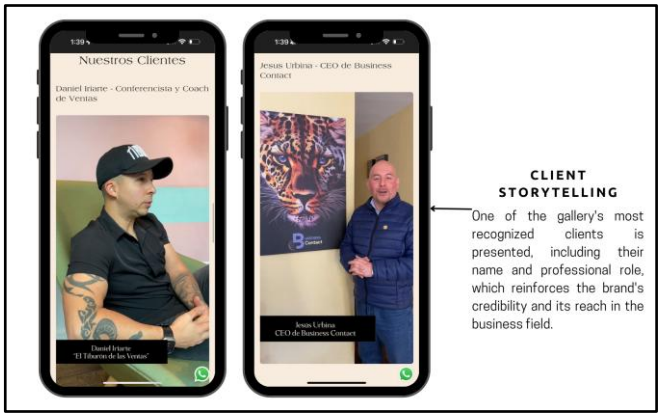

Fig. 12 Improved MVP View – Clients.

YouTube link by Daniel Iriarte: https://www.youtube.com/shorts/VYJqob5O8GM

YouTube link by Jesús Urbinas: https://www.youtube.com/shorts/Q7NAerd9qAQ

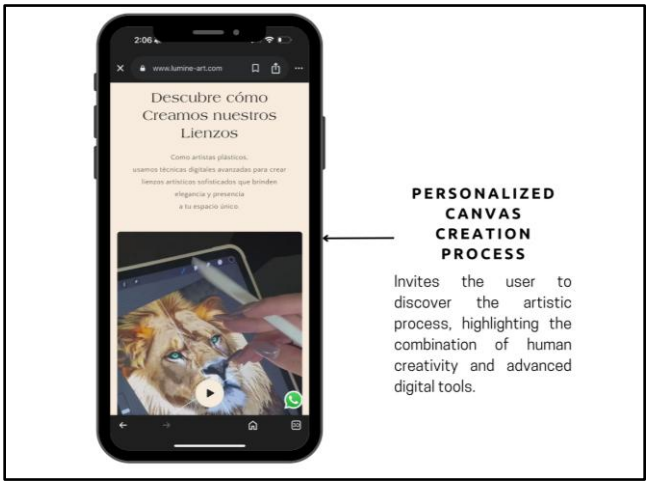

Fig. 13 View of the improved MVP – creation process.

Link to the canvas creation process: https://youtube.com/shorts/8YPKNJtmx5Y

Limitations: The study is limited by its focus on entrepreneurs in Metropolitan Lima, reducing generalizability. It also emphasized symbolic value validation over technical feasibility and scalability within the Lean Startup approach.

V. Conclusions

The virtual gallery positively influenced users' symbolic perception of the brand, enhancing visual distinction, emotional connection, and brand clarity—confirming that art can strengthen SME positioning.

The business model, designed to be modular and scalable, shows potential for replication across industries, offering SMEs a new way to stand out through personalized artistic branding.

Lean Startup proved effective and adaptable in the creative sector, enabling the validation of an innovative, art-based identity solution through iterative build–measure–learn cycles—even in non-tech industries.

References

[1] Adamus-Matuszyńska, A., Dzik, P., Michnik, J., & Polok, G. (2021). Visual component of destination brands as a tool for communicating sustainable tourism offers. Sustainability, 13(2), 731. https://doi.org/10.3390/su13020731

[2] Aguerrebere, C., Grijalva, M. A., & Villegas, R. (2024). Reputación corporativa e inteligencia artificial: El nuevo rostro de la imagen institucional. Revista Latinoamericana de Comunicación, 38(1), 45–60. https://doi.org/10.7764/rlc.38.1.45

[3] Apilo, T., Kukko, M., & Pihlajamaa, M. (2022). Adapting Lean Startup in non-tech SMEs: A systematic review. Small Business Research and Practice, 9(3), 55–70. https://doi.org/10.7890/sbrp.2022.93.005

[4] Becker, S. D., & Endenich, C. (2023). Ecosystems and lean startup success. Technovation, 117, 102657. https://doi.org/10.1016/j.technovation.2022.102657

[5] Berger, E., & Brem, A. (2021). Digital transformation of business models. Journal of Business Research, 125, 577–587. https://doi.org/10.1016/j.jbusres.2020.10.046

[6] Candi, M., Melia, M., & Colurcio, M. (2022). Two sides of value co-creation: Implications for branding in digital startups. Journal of Business Research, 145, 329–341. https://doi.org/10.1016/j.jbusres.2022.02.028

[7] Christofi, M., et al. (2022). Agile entrepreneurship: Applying Lean Startup principles in non-tech sectors. Technological Forecasting and Social Change, 178, 121609. https://doi.org/10.1016/j.techfore.2022.121609

[8] Clauss, T., Abebe, M., & Tangpong, C. (2021). Organizational identity, dynamic capabilities, and performance in digital ventures. Journal of Business Research, 130, 558–570. https://doi.org/10.1016/j.jbusres.2021.02.048

[9] Cobos, V. (2023). Arte y empresa: cómo el arte puede contribuir a la felicidad laboral. Cuadernos del Centro de Estudios en Diseño y Comunicación, 193. https://doi.org/10.18682/cdc.vi193.9587

[10] Cook, T., Bell, J., & Anders, R. (2023). Using lean startup to evaluate digital learning tools in health education. Education and Information Technologies, 28, 10021–10043. https://doi.org/10.1007/s10639-023-11679-z

[11] Costa Alves, P., Silva, R., & Almeida, H. (2023). Visual branding and Lean Startup: A user-centered approach for SMEs. Journal of Creative Business Studies, 5(1), 22–35. https://doi.org/10.1016/j.jcbs.2023.01.003

[12] Daspit, J. J., & D'Souza, D. E. (2021). Organizational identity and innovation: A review and research agenda. Journal of Business Research, 129, 902–915. https://api.hb2504.txstate.edu/py/getvita.py?plid=4929118

[13] Denner, M.-S., Piller, F. T., & Schuh, G. (2021). Business model innovation in the era of digital transformation. Journal of Business Research, 130, 738–748. https://doi.org/10.1016/j.jbusres.2020.04.048

[14] Fakieh, B., Al-Ghamdi, A. S., & Ragab, M. (2022). The Effect of Utilizing Business Model Canvas on the Satisfaction of Operating Electronic

Business. Complexity, 2022, Article ID 1649160. https://doi.org/10.1155/2022/1649160
[15] Frederiksen, D., & Brem, A. (2021). Lean Startup and the business model: Experimenting for innovation. International Journal of Innovation Management, 25(6), 2150050. https://doi.org/10.1142/S1363919621500505
[16] Gupta, P., & Bose, I. (2022). Digital transformation and lean startup practices. Information & Management, 59(4), 103639. https://doi.org/10.1016/j.im.2021.103639
[17] Harms, R., & Schwery, M. (2021). Lean Startup: Operationalizing Lean Principles in Entrepreneurship. International Entrepreneurship and Management Journal, 17(3), 1183–1207. https://doi.org/10.1007/s11301-020-00209-4
[18] INEI (2025). Demografía Empresarial en el Perú - IV trimestre 2024. https://m.inei.gob.pe/media/MenuRecursivo/boletines/boletin-demografia-empresarial-4t24.pdf
[19] Instituto Nacional de Estadística e Informática. (2025). Demografía empresarial en el Perú: IV trimestre de 2024 (N.º 01). Instituto Nacional de Estadística e Informática. https://www.inei.gob.pe
[20] Irene, V. F., Saadah, U., & Permatasari, D. I. (2021). User experience design for virtual exhibition platform using Lean Startup method. 2021 International Electronics Symposium (IES), 132–138. https://doi.org/10.1109/IES53407.2021.9593975
[21] Kotzaivazoglou, I., Fragidis, G., Papaioannou, E., Assimakopoulos, C., & Nanos, I. (2023). Supporting culture to improve corporate image: The case of Greek banks. Sustainability, 15(5), 3976. https://doi.org/10.3390/su15053976
[22] Kukko, M., & Apilo, T. (2023). Branding challenges in small firms: A lean perspective. Journal of Brand Management, 30(4), 409–428. https://doi.org/10.1057/s41262-023-00314-z
[23] Lange, F., Tomini, N., Brinkmann, F., Kanbach, D. K., & Kraus, S. (2023). Demystifying massive and rapid business scaling – An explorative study on driving factors in digital start-ups. Technological Forecasting and Social Change, 196(122841), 122841. https://doi.org/10.1016/j.techfore.2023.122841
[24] Leonidou, C. N., et al. (2022). Branding in SMEs: A review and future research directions. Journal of Small Business Management, 60(1), 141–177. https://doi.org/10.1080/00472778.2021.1883036
[25] Liu, M., Gorgievski, M., Zwaga, J., & Paas, F. (2023). Understanding and motivating student feedback seeking: Insights from a lean startup based entrepreneurship program. International Journal of Management Education, 21(1), 100750. https://doi.org/10.1016/j.ijme.2022.100750
[26] Marullo, C., Caputo, A., & Pellegrini, M. M. (2022). Learning through pivoting in Lean Startup: Evidence from digital entrepreneurs. Journal of Small Business Management, Advance online publication. https://doi.org/10.1080/00472778.2022.2055455
[27] Mohamad, B., Adetunji, R. R., Alarifi, G., Ismail, A. R., & Akanmu, M. D. (2022). A visual identity-based approach of Southeast Asian city branding: A netnography analysis. Journal of ASEAN Studies, 10(1), 1–15. https://doi.org/10.21512/jas.v10i1.7330
[28] Na, J., Kim, M., & Lee, S. (2022). Women entrepreneurship and innovation under crisis: Evidence from Korea. Asian Journal of Innovation and Policy, 11(2), 199–221. https://doi.org/10.7545/AJIP.2022.11.2.199
[29] Nambisan, S., Wright, M., & Feldman, M. (2021). The digital transformation of innovation and entrepreneurship. Research Policy, 50(1), 104128. https://doi.org/10.1016/j.respol.2020.104128
[30] Olek, S. (2023). Lean startup method as a tool for risk minimization in digital entrepreneurship. Journal of Business Research, 158, 113472. https://doi.org/10.1016/j.jbusres.2023.113472
[31] Oliveira, T., Araujo, B. H. S., & Kimura, H. (2021). Branding strategies for small businesses in digital environments. Journal of Business Research, 134, 620–628. https://doi.org/10.1016/j.jbusres.2021.05.016
[32] Raneri, S., Lecron, F., Hermans, J., & Fouss, F. (2023). Predictions through Lean Startup? Harnessing AI-based predictions under uncertainty. International Journal of Entrepreneurial Behaviour & Research, 29(3), 595–617. https://doi.org/10.1108/IJEBR-07-2021-0566
[33] Robson, A., & Farquhar, J. (2021). Enhancing the customer experience through corporate branding: A retail banking case study. Journal of Strategic Marketing, 29(3), 215–229. https://doi.org/10.1080/0965254X.2020.1727727
[34] Shankar, A., Narang, R., & Narayan, A. (2022). Customer engagement strategies for digital startups: A branding perspective. Journal of Strategic Marketing, 30(5), 456–470. https://doi.org/10.1080/0965254X.2021.1879271
[35] Shevchenko, A., & Bagautdinova, N. (2023). Agile marketing: A new approach to startup branding strategy. Procedia Computer Science, 217, 1332–1337. https://doi.org/10.1016/j.procs.2022.12.224
[36] Silva, S. C., Duarte, P., & Filipescu, D. A. (2023). Exploring digital branding and customer engagement. Journal of Strategic Marketing, 31(2), 155–172. https://doi.org/10.1080/0965254X.2022.2077363
[37] Törmänen, A., & Pihkala, T. (2022). Entrepreneurial branding in digital platforms. International Small Business Journal, 40(6), 696–720. https://doi.org/10.1177/02662426221092647
[38] Triatmanto, B., Respati, H., & Wahyuni, N. (2021). Towards an understanding of corporate image in the hospitality industry East Java, Indonesia. Heliyon, 7(5), e06404. https://doi.org/10.1016/j.heliyon.2021.e06404
[39] Wit, B., Dresler, P., & Surma-Syta, A. (2021). Innovation in start-up business model in energy-saving solutions for sustainable development. Energies, 14(12), 3583. https://doi.org/10.3390/en14123583
[40] Zhuge, Y., Chen, Y., & Li, J. (2023). Sustainable development of new ventures using Lean Startup. Sustainability, 15(10), 8123. https://doi.org/10.3390/su15108123