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# Digital Distribution and Storytelling Effects on Entrepreneurial Efficacy, Opportunity Recognition, and Entrepreneurial Intention in the Beauty Industry

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## Abstract

**Purpose:** This study examines how digital distribution platform utilization and brand storytelling capability of beauty industry entrepreneurs influence entrepreneurial intention, with entrepreneurial self-efficacy (ESE) and market opportunity recognition (MOR) as mediators. By analyzing both direct and sequential mediation, the study develops an integrated framework connecting entrepreneurial capabilities, distribution-oriented cognition, and entrepreneurial intention. **Research design, data, and methodology:** A quantitative survey was conducted with 494 current and prospective entrepreneurs in Korea's beauty sector. Measurement items were adapted from prior research, refined through exploratory factor analysis (EFA) and reliability testing. The SPSS PROCESS macro v4.2 was used to test mediation (Model 4) and sequential mediation (Model 6), with 10,000 bootstrap samples and 95% confidence intervals. **Results:** All four digital distribution platform dimensions and three storytelling dimensions (narrative construction, identity expression, social media response utilization) showed significant indirect effects on entrepreneurial intention via ESE and MOR. Sequential mediation pathways were consistently significant. **Conclusions:** Digital distribution and storytelling capabilities affect entrepreneurial intention through ESE and MOR, with sequential mediation strongly supported. These results highlight the interaction of psychological confidence and market sensitivity in strengthening entrepreneurial intentions, offering theoretical contributions and practical implications for entrepreneurship education, trade logistics strategies, and policy support.

**Keywords :** Beauty Entrepreneurship, Digital Platform Distribution Capability; Brand storytelling capability; Entrepreneurial self-efficacy (ESE); Entrepreneurial intention.

**JEL Classification Code** : L16, L21, L66, L80

## 1. Introduction

Recent digital transformation and the expansion of the platform economy have fundamentally reshaped the entrepreneurial environment in the beauty industry. Multi-channel platforms such as Instagram, Naver Smart Store, and Coupang have emerged as critical arenas for consumer engagement and sales conversion, while digital resources—

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including short-form content, reviews, user-generated content (UGC), generative AI, and data-driven decision-making—have become indispensable from the early stages of venture creation (Verhoef et al., 2015; Sousa & Voss, 2006; De Freitas et al., 2025). Within this context, entrepreneurs' digital platform Distribution capability comprises multidimensional skills such as multi-channel operation, content planning, AI utilization, and data-based strategic development, and has been recognized as a key source of competitive advantage.

At the same time, brand storytelling capability—defined as the ability to connect with consumers emotionally—has become another critical determinant of entrepreneurial success in the beauty sector. When a brand consistently conveys its unique philosophy and narrative (Woodside et al., 2008; Escalas, 2004), aligns with consumers' self-identity (Bruhn et al., 2012), and integrates consumer responses from social media into its strategies (Schivinski et al., 2016; Hollebeek et al., 2014), it transcends the level of a mere product and becomes embedded in consumers' experiences and values. Accordingly, both digital platform capability and brand storytelling capability can be regarded as essential independent variables that beauty entrepreneurs must acquire at the early stage of market entry.

However, for these capabilities to translate into entrepreneurial action, cognitive and psychological mediators such as entrepreneurial self-efficacy (ESE) and market opportunity recognition (MOR) are required. ESE refers to entrepreneurs' self-belief in their ability to perform diverse entrepreneurial tasks, including idea generation, team building, financial management, problem-solving, and resource acquisition—and exerts a direct influence on entrepreneurial intention (Bandura, 1986; Chen et al., 1998; Zhao et al., 2005; McGee et al., 2009). MOR, defined as the ability to detect, interpret, and transform emerging opportunities from changing consumer needs, technological innovations, and competitive dynamics (Ardichvili et al., 2003; Baron, 2006; Tang et al., 2012; Kirzner, 2015), plays a pivotal role in enabling entrepreneurs to turn environmental uncertainty into opportunity.

Ultimately, these processes converge into entrepreneurial intention (EI), which is defined as the plan and commitment to launch a venture within a given time frame and serves as the strongest predictor of actual entrepreneurial behavior (Liñán & Chen, 2009; Krueger et al., 2000; Fayolle et al., 2014). Prior research has established that both ESE and MOR enhance EI; however, few empirical studies have examined the sequential mediation pathway (ESE → MOR → EI) in the context of the beauty industry. Moreover, limited attention has been given to investigating how digital platform capability and brand storytelling capability, operationalized as multidimensional constructs, integrate into the path toward EI.

To address this gap, the present study empirically analyzes how digital platform capability and brand storytelling capability influence EI through the mediating roles of ESE and MOR among beauty entrepreneurs. Using PROCESS macro analyses, mediation (Model 4) and sequential mediation (Model 6) were tested, and results indicated that both simple and sequential mediation effects of ESE and MOR were significant across all sub-dimensions. These findings demonstrate that when entrepreneurs possess digital and storytelling capabilities, their self-efficacy and market sensitivity are strengthened, which in turn enhances entrepreneurial intention through a psychological pathway.

Accordingly, this study makes academic contributions by presenting an integrated model of entrepreneurial capability, cognitive mediators, and behavioral intention in the beauty industry context, and offers practical implications that entrepreneurship support programs should incorporate training in multi-channel, content, AI, and data capabilities, as well as brand storytelling, alongside educational and mentoring initiatives designed to foster entrepreneurial self-efficacy.

## 2. Literature Review

In this study, digital platform capability is defined as the entrepreneur's ability to orchestrate multiple digital distribution channels and technological tools for value creation and capture. It is operationalized into four sub-dimensions—multi-channel operation, digital content planning, AI utilization, and data-driven decision-making (20 items). Unlike digital marketing capability, which emphasizes promotional content and campaign execution, digital platform capability highlights technological integration and operational orchestration as entrepreneurial resources.

Brand storytelling capability is defined as the capacity to design and sustain a coherent narrative and identity system across platforms. It is operationalized into three sub-dimensions—narrative construction, identity expression, and social media response utilization (20 items). Unlike digital marketing capability, which focuses on tactical promotion, storytelling capability emphasizes narrative coherence, identity building, and meaning co-creation with consumers. Items related to emotional expression and customer journey design were removed to ensure conceptual distinctiveness.

### 2.1 Digital Platform Distribution Capability (DP)

The expansion of digital transformation and the omnichannel environment requires entrepreneurs to integrate multiple channels and tools effectively. Drawing

on prior research, this study conceptualizes digital platform capability as comprising four dimensions: multi-channel operation, digital content planning, AI utilization, and data-driven decision-making.

Prior studies suggest that multi-channel operation enables entrepreneurs to diversify consumer touchpoints and adapt flexibly to market dynamics, thereby enhancing their opportunity recognition and ultimately entrepreneurial intention (Verhoef et al., 2015). Digital content planning, by aligning messages and styles with channel-specific audiences, fosters confidence in managing communication tasks, which strengthens entrepreneurial self-efficacy (Islam et al., 2025). AI utilization helps entrepreneurs overcome uncertainty and resource constraints, increasing their confidence to execute entrepreneurial tasks and recognize emerging opportunities (De Freitas et al., 2025; Kar, 2023). Similarly, data-driven decision-making improves sensitivity to consumer trends and competitor actions, reinforcing market opportunity recognition and motivating stronger entrepreneurial intention (Wang et al., 2021).

#### 2.1.1. Multi-Channel Operation

Multi-channel operation refers to the ability to manage multiple digital platforms such as Instagram, Naver Smart Store, and Coupang in an integrated manner, while tailoring marketing strategies to the unique characteristics of each channel. It involves strategically scheduling and allocating content formats, testing new channels, and deciding whether to scale based on performance outcomes. This capability is essential for diversifying consumer touchpoints and adapting to the omnichannel environment, consistent with prior findings that multi-channel integration enhances firm performance and customer experience (Verhoef et al., 2015; Sousa & Voss, 2006).

#### 2.1.2. Digital Content Planning

Digital content planning refers to the ability to strategically design diverse content formats such as reels, reviews, and shorts; align visual and textual styles with channel characteristics; establish clear content objectives based on target audiences; and analyze performance indicators (e.g., views, conversion rates) to refine strategies. Its significance has been confirmed in studies on the impact of short-form videos and influencer content on marketing outcomes (Islam et al., 2025), as well as research on personalized and segmentation-based customer targeting (Chandra et al., 2022; Alves Gomes & Meisen, 2023; Chaffey & Smith, 2022).

#### 2.1.3. AI Utilization

AI utilization involves leveraging generative AI to ideate and produce content, create visual materials, use AI-driven analytical tools (e.g., customer sentiment analysis, SEO analysis) to inform strategies, and conduct optimization methods such as A/B testing. Recent studies indicate that generative AI is transforming the processes of idea generation and content creation (De Freitas et al., 2025; Korzynski et al., 2023) and plays a critical role in shaping digital marketing strategies and optimizing performance (Kar, 2023; Adeleke et al., 2022).

#### 2.1.4. Data-Driven Decision-Making

Data-driven decision-making refers to entrepreneurs' ability to analyze performance metrics such as views, click-through rates, and conversion rates; adjust marketing strategies; accordingly, identify the causes of underperforming indicators; and select effective content based on data insights. This aligns with studies showing that data analysis and self-efficacy enhance decision-making quality (Wang et al., 2021) and that data-driven decision-making contributes to marketing strategy optimization (Krishen & Petrescu, 2019).

Accordingly, this study measures digital platform capability across these four dimensions, providing a multidimensional understanding of entrepreneurs' digital competencies and a foundation for empirically examining their relationship with entrepreneurial outcomes.

### 2.2. Brand Storytelling Capability (BST)

Brand storytelling has emerged as a strategic approach that goes beyond traditional advertising messages by conveying brand value through narratives that connect with consumers' experiences and emotions (Woodside, Sood, & Miller, 2008). Prior research emphasizes that when brands maintain consistent narratives and build emotional bonds with consumers, they positively influence consumer attitudes and purchasing behavior (Escalas, 2004; Winkler et al., 2023). In this study, brand storytelling capability is conceptualized in three dimensions: narrative construction, identity expression, and social media response utilization.

Prior research highlights that narrative construction allows entrepreneurs to communicate their philosophy and value proposition through compelling stories, which not only strengthen self-confidence but also improve their ability to detect opportunities resonating with consumer needs (Woodside et al., 2008; Escalas, 2004). Identity expression, by aligning brand stories with consumers' self-concept and authenticity, reinforces entrepreneurs' confidence in their brand while simultaneously sharpening their sensitivity to evolving market opportunities (Bruhn et al., 2012; Campagna et al., 2023). Social media response utilization, which involves incorporating consumer reviews, comments, and feedback into brand stories, has been shown to enhance interactive learning and market alertness, thereby

boosting entrepreneurs' opportunity recognition and their intention to pursue new ventures (Schivinski et al., 2016; Hollebeek et al., 2014).

#### 2.2.1. Narrative Construction

Narrative construction refers to the ability to communicate a brand's philosophy and background through structured stories, incorporate emotional resonance into messages, connect consumer experiences with brand narratives, and maintain a consistent tone and mood throughout the storyline (Woodside et al., 2008; Winkler et al., 2023; Escalas, 2004; Roy et al., 2021). Such narrative approaches enable consumers to perceive the brand as part of a meaningful story rather than merely a product or service, thereby enhancing engagement and loyalty.

#### 2.2.2. Identity Expression

Identity expression refers to the ability to construct brand stories that align with consumers' self-identity (Escalas, 2004), communicate authenticity (Bruhn et al., 2012), and foster emotional attachment by offering immersive brand experiences (Papadopoulou et al., 2023). This capability further promotes brand trust and purchase intention (Campagna et al., 2023). By encouraging consumers to identify with the brand, identity expression serves as a key driver of brand loyalty and long-term relationship building.

#### 2.2.3. Social Media Response Utilization

Social media response utilization refers to the ability to actively integrate consumer reviews, comments, and messages into content creation (Schivinski et al., 2016); incorporate frequently mentioned topics from feedback and inquiries into storytelling (Muntinga et al., 2011); analyze consumer response data to refine content themes and expression styles (Schivinski et al., 2021); and strategically embed these insights into marketing planning (Hollebeek et al., 2014). This capability highlights the importance of being responsive to consumer voices and enhancing brand trust and engagement through interactive, two-way communication.

### 2.3. Entrepreneurial Self-Efficacy (ESE)

Entrepreneurial self-efficacy originates from entrepreneurs' confidence in presenting business ideas to the market and formulating plans and strategies for execution (Chen et al., 1998; Zhao et al., 2005). It further encompasses self-belief in building effective teams, exercising leadership, managing finances and budgets, securing initial funding, and mobilizing external resources (McGee et al., 2009). Beyond organizational management and resource acquisition, ESE also includes interpersonal capabilities such as proactively resolving anticipated challenges, understanding customer needs and communicating effectively, and negotiating favorable terms (Bandura, 1986; Chen et al., 1998). These multidimensional competencies function as a psychological resource that combines self-belief with action-oriented ability, motivating entrepreneurs to pursue opportunities and persist in uncertain environments.

### 2.4. Market Opportunity Recognition (MOR)

Market opportunity recognition refers to entrepreneurs' ability to rapidly detect emerging customer needs, identify possibilities for existing products and services, and respond sensitively to changes in consumer behavior (Tang, Kacmar, & Busenitz, 2012; Ardichvili, Cardozo, & Ray, 2003; Baron, 2006). It goes beyond reactive market sensing to include discovering ideas that transform customer dissatisfaction into opportunities, interpreting technological advances as potential ventures, and responding swiftly to shifts in market trends and competitor strategies (Ozgen & Baron, 2007; Fiet, 2007). Moreover, entrepreneurs gather and interpret information from diverse sources to identify trends and leverage minor disequilibria or inefficiencies in the market as opportunities, thereby enhancing value creation (Tang et al., 2012; Kirzner, 2015). Thus, MOR functions not merely as information acquisition but as a higher-order cognitive process through which entrepreneurs connect and interpret patterns in the environment and transform them into actionable business ideas. It therefore serves as a critical cognitive foundation that explains entrepreneurial behavior and strengthens entrepreneurial intention.

### 2.5. Entrepreneurial Intention (EI)

Entrepreneurial intention refers to an individual's plan and commitment to start a business within a given timeframe and is widely regarded as the strongest predictor of entrepreneurial behavior (Liñán & Chen, 2009). EI reflects not just interest but a readiness to act, encompassing concrete planning and the will to transform ideas into entrepreneurial action (Zhao, Seibert, & Hills, 2005; Fayolle, Liñán, & Moriano, 2014). It is also associated with perceiving entrepreneurship as a realistic career option and viewing independent business creation as more attractive than stable employment (Krueger, Reilly, & Carsrud, 2000; Lee, Wong, Foo, & Leung, 2011). Furthermore, EI embodies beliefs that entrepreneurship enables individuals to realize desired lifestyles and values, willingness to engage in entrepreneurship-related education and training (Liñán, Rodríguez-Cohard, & Rueda-Cantuche, 2011), and careful evaluation of risks and trade-offs before venture creation (Fayolle et al., 2014). Accordingly, EI is conceptualized as

a comprehensive construct that integrates psychological readiness, concrete intention, and value realization motives, serving as the ultimate outcome variable in which psychological and cognitive factors such as ESE and MOR converge.

### 2.6. Research Hypotheses and Model

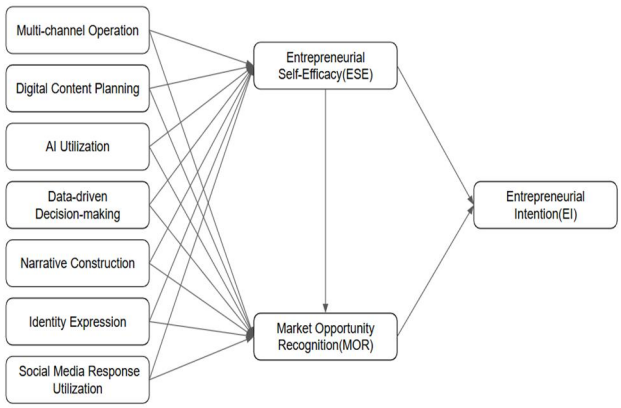


**Figure 1:** Proposed Research Model

Based on [Figure 1], the hypotheses of this study are formulated as follows:

**H1:** Digital platform capability will positively affect entrepreneurial intention through the mediation of entrepreneurial self-efficacy (H1a: multi-channel operation, H1b: digital content planning, H1c: AI utilization, H1d: data-driven decision-making).

**H2:** Brand storytelling capability will positively affect entrepreneurial intention through the mediation of entrepreneurial self-efficacy (H2a: narrative construction, H2b: identity expression, H2c: social media response utilization).

**H3**: Digital platform capability will positively affect entrepreneurial intention through the mediation of market opportunity recognition (H3a–H3d structured in the same way as H1a–d).

**H4:** Brand storytelling capability will positively affect entrepreneurial intention through the mediation of market opportunity recognition (H4a–H4c structured in the same way as H2a–c).

**H5:** Entrepreneurial self-efficacy will positively affect entrepreneurial intention through the mediation of market opportunity recognition.

**H6:** Digital platform capability will positively affect entrepreneurial intention through the sequential mediation of entrepreneurial self-efficacy and market opportunity recognition.

## 3. Materials and Methods

### 3.1. Sample and Data Collection

The study targeted prospective and current entrepreneurs in the Korean beauty industry, yielding 494 valid responses. Surveys were distributed via industry associations, networks, and social media, including both early-stage and established entrepreneurs. Data were collected through Naver Forms from July 10 to August 3, 2025, using both online (e.g., Instagram) and offline channels All items were measured on a five-point Likert scale, with mean values above 4.3, indicating strong agreement and high levels of digital capability, storytelling capability, and entrepreneurial cognition.

### 3.2. Data Analysis

Data analysis was conducted using SPSS 26.0 and PROCESS Macro 4.2 developed by Hayes (2022). The specific procedures were as follows.

First, frequency analysis was performed to examine the demographic characteristics of the respondents. Second, exploratory factor analysis (EFA) was conducted to test the structural validity of the measurement instruments, and Cronbach's α coefficients were calculated to assess internal consistency and reliability. Third, the means and standard deviations of the main variables were computed, and skewness and kurtosis values were examined to verify data normality.

All analyses were conducted at the $p < .05$ significance level. For mediation analysis, bootstrapping with 10,000 resamples was performed, and mediation effects were considered significant if the 95% confidence interval (CI) did not include zero.

## 4. Results

### 4.1. General Characteristics of Respondents

**Table 1:** General Characteristics of Respondents (N=494)

| Variable | Category | Frequency (N) | Percentage (%) |
|---|---|---|---|
| Gender | Male | 81 | 16.4 |
| | Female | 413 | 83.6 |
| Age | Under 20 | 11 | 2.2 |
| | 20–29 | 101 | 20.4 |
| | 30–39 | 246 | 49.8 |
| | 40–49 | 125 | 25.3 |
| | 50 and above | 11 | 2.2 |
| Education | High school or below | 29 | 5.9 |
| | Junior college | 101 | 20.4 |

| Variable | Category | Frequency (N) | Percentage (%) |
|---|---|---|---|
| | University | 311 | 63.0 |
| | Graduate school or higher | 46 | 9.3 |
| | Others | 7 | 1.4 |
| Marital status | Married | 178 | 36.0 |
| | Single | 296 | 59.9 |
| | Others | 20 | 4.0 |
| Residential area | Non-capital region | 98 | 19.8 |
| | Capital region (Seoul, Gyeonggi, Incheon) | 396 | 80.2 |
| Monthly income | Less than 1M KRW | 32 | 6.5 |
| | 1M–3M KRW | 82 | 16.6 |
| | 3M–5M KRW | 150 | 30.4 |
| | 5M–8M KRW | 175 | 35.4 |
| | Over 8M KRW | 55 | 11.1 |
| Occupation | Business owner | 225 | 45.5 |
| | Service (beauty, retail, etc.) | 61 | 12.3 |
| | Housewife | 33 | 6.7 |
| | Student | 26 | 5.3 |
| | Employee | 148 | 30.0 |
| | Others | 1 | 0.2 |
| Duration of business operation | Less than 1 year (including preparation) | 251 | 50.8 |
| | 1–3 years | 160 | 32.4 |
| | 3–5 years | 74 | 15.0 |
| | 5–7 years | 5 | 1.0 |
| | Over 7 years | 4 | 0.8 |
| Perceived appropriate preparation period | Less than 1 year | 219 | 44.3 |
| | 1–2 years | 204 | 41.3 |
| | 2–3 years | 60 | 12.1 |
| | 3–4 years | 8 | 1.6 |
| | Over 4 years | 3 | 0.6 |

## 4.1. Descriptive Statistics

### 4.1.1. Descriptive Statistics

Descriptive statistics were calculated to examine the characteristics and normality of digital platform capability, brand storytelling capability, entrepreneurial self-efficacy, market opportunity recognition, and entrepreneurial intention.

The mean scores for digital platform capability (5-point scale) were 4.378 for multi-channel operation, 4.385 for digital content planning, 4.355 for AI utilization, and 4.356 for data-driven decision-making. For brand storytelling capability (5-point scale), the mean scores were 4.233 for narrative construction, 4.383 for identity expression, and 4.384 for social media response utilization. The mediating variables also showed relatively high means, with entrepreneurial self-efficacy at 4.321 and market opportunity recognition at 4.345. The dependent variable, entrepreneurial intention, recorded a mean of 4.365, indicating that respondents generally exhibited a high level of entrepreneurial intention. To test the normality assumption, skewness and kurtosis were examined. Skewness values ranged from –1.497 to –0.886, while kurtosis values ranged from 0.454 to 3.906. These values fall within Kline's (2016) recommended thresholds (absolute skewness < 3, absolute kurtosis < 7), confirming that the data satisfied the normality assumption.

**Table 2:** Descriptive Statistics of Main Variables (n = 494)

| Variable | Mean | SD | Min | Max | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| Multi-channel Operation | 4.378 | 0.56 | 2.0 | 5.0 | -1.277 | 1.897 |
| Digital Content Planning | 4.385 | 0.545 | 2.33 | 5.0 | -1.151 | 1.413 |
| AI Utilization | 4.355 | 0.591 | 1.67 | 5.0 | -1.396 | 2.517 |
| Data-driven Decision-making | 4.356 | 0.54 | 2.0 | 5.0 | -1.26 | 2.419 |
| Narrative Construction | 4.233 | 0.587 | 2.0 | 5.0 | -0.886 | 0.454 |
| Identity Expression | 4.383 | 0.554 | 1.67 | 5.0 | -1.337 | 2.512 |
| Social Media Response Utilization | 4.384 | 0.532 | 1.33 | 5.0 | -1.497 | 3.906 |
| Entrepreneurial Self-Efficacy (ESE) | 4.321 | 0.476 | 1.78 | 5.0 | -1.113 | 1.679 |
| Market Opportunity Recognition (MOR) | 4.345 | 0.454 | 2.4 | 5.0 | -1.076 | 1.135 |
| Entrepreneurial Intention (EI) | 4.365 | 0.47 | 2.38 | 5.0 | -1.125 | 1.303 |

## 4.3. Exploratory Factor Analysis (EFA) and Reliability Analysis

### 4.3.1. AI Platform Capability

**Table 3:** KMO and Bartlett's Test for Digital Platform Capability

| KMO and Bartlett's Test | | Value |
|---|---|---|
| KMO Measure of Sampling Adequacy | | .926 |
| Bartlett's Test of Sphericity | $\chi^2$ | 2003.686 |
| | df | 66 |
| | Sig. (p) | .000 |

Prior to factor analysis, the KMO and Bartlett's test were conducted. The KMO measure of sampling adequacy was .926, indicating that the dataset was appropriate for factor analysis. Bartlett's test of sphericity was also significant ($\chi^2 = 2003.686$, df = 66, $p < .001$), confirming that sufficient correlations existed among the variables to proceed with factor analysis.

The exploratory factor analysis (EFA) extracted four factors—multi-channel operation, digital content planning, AI utilization, and data-driven decision-making—with eigenvalues of 2.048, 1.970, 1.911, and 1.860, respectively. The total variance explained was 64.905%.

The reliability analysis showed Cronbach's α values of .731 for multi-channel operation, .724 for digital content planning, .717 for AI utilization, and .704 for data-driven decision-making, all above the .70 benchmark. The overall scale yielded a Cronbach′s α of .883, demonstrating that the measurement instrument exhibited high internal consistency and reliability.

**Table 4:** Factor Analysis and Reliability of Digital Platform Capability

| Factor | Measurement Item | Factor Loading | | | |
|---|---|---|---|---|---|
| Multi-channel Operation | Ability to integrate and manage multiple digital sales channels (products, inventory, orders, customer management) | 0.115 | 0.758 | 0.164 | 0.249 |
| | Ability to strategically allocate posting schedules and content formats by channel | 0.259 | 0.707 | 0.222 | 0.134 |
| | Ability to test performance of new channels | 0.345 | 0.685 | 0.170 | 0.185 |
| Digital Content Planning | Ability to design diverse content formats (e.g., reels, reviews, shorts) | 0.673 | 0.202 | 0.339 | 0.114 |
| | Ability to analyze content performance (e.g., views, conversion rates) | 0.738 | 0.258 | 0.159 | 0.165 |
| | Ability to incorporate performance results into strategy | 0.663 | 0.237 | 0.159 | 0.300 |
| AI Utilization | Ability to create visual content using generative AI tools | 0.405 | 0.089 | 0.266 | 0.565 |
| | Ability to establish strategies using generative AI | 0.208 | 0.170 | 0.109 | 0.815 |
| | Ability to test marketing effectiveness with AI (A/B testing) | 0.084 | 0.334 | 0.202 | 0.735 |
| Data-driven Decision-making | Ability to monitor views, click-through rates, and conversion rates | 0.381 | 0.131 | 0.622 | 0.086 |
| | Ability to adjust marketing strategies based on performance data | 0.188 | 0.263 | 0.708 | 0.233 |
| | Ability to evaluate effective content through data analysis | 0.129 | 0.165 | 0.793 | 0.172 |
| Eigenvalues | 2.048 | 1.970 | 1.911 | 1.860 | |
| Explained variance (%) | 17.068 | 16.415 | 15.924 | 15.498 | |
| Cumulative variance explained (%) | 17.068 | 33.483 | 49.407 | 64.905 | |
| Cronbach's α: | .724 | .731 | .704 | .717 | |
| | .883 | | | | |

### 4.3.2. Brand Storytelling Capability

**Table 5:** KMO and Bartlett's Test for Brand Storytelling Capability

| KMO and Bartlett's Test | | Value |
|---|---|---|
| KMO Measure of Sampling Adequacy | | .902 |
| Bartlett's Test of Sphericity | $\chi^2$ | 1231.628 |
| | df | 36 |
| | Sig. (p) | .000 |

Prior to conducting the factor analysis, the KMO and Bartlett's test of sphericity were performed. The KMO measure of sampling adequacy was .902, indicating that the collected data were appropriate for factor analysis. In addition, Bartlett's test of sphericity yielded a chi-square value of 1231.628 ($df = 36$, $p < .001$), confirming that statistically significant correlations existed among the variables, thereby satisfying the conditions for conducting factor analysis.

The exploratory factor analysis identified three factors for brand storytelling capability: narrative construction, social media response utilization, and identity expression. The eigenvalues were 1.926, 1.907, and 1.848, respectively, and the cumulative variance explained was 63.126%.

The reliability analysis showed Cronbach's α values of .703 for narrative construction, .702 for social media response utilization, and .703 for identity expression, all exceeding the .70 threshold. The overall scale demonstrated a Cronbach's α of .841, indicating a high level of internal consistency and confirming that the measurement instrument used in this study was reliable.

**Table 6:** Factor Analysis and Reliability of Brand Storytelling Capability

| Factor | Measurement Item | Factor Loading | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Narrative Construction | The brand can create messages that resonate with consumers. | 0.757 | 0.147 | 0.221 |
| | The brand story can be connected to consumer experiences. | 0.788 | 0.138 | 0.215 |
| | Our brand can consistently present a coherent tone and mood. | 0.670 | 0.325 | 0.130 |

| Factor | Measurement Item | Factor Loading | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| Identity Expression | The brand story can be structured to align with consumers' self-identity. | 0.189 | 0.252 | 0.734 |
| | Our brand can create inspiring stories that foster consumer attachment. | 0.159 | 0.150 | 0.802 |
| | The brand story can stimulate purchase intention. | 0.289 | 0.306 | 0.625 |
| Social Media Response Utilization | The brand can reflect frequently mentioned topics from reviews or questions into content. | 0.297 | 0.663 | 0.224 |
| | The brand can analyze customer responses. | 0.177 | 0.788 | 0.158 |
| | The brand can actively incorporate social response data into marketing planning | 0.135 | 0.722 | 0.297 |
| Eigenvalues | | 1.926 | 1.907 | 1.848 |
| Explained variance (%) | | 21.401 | 21.191 | 20.533 |
| Cumulative variance explained (%) | | 21.401 | 42.592 | 63.126 |
| Cronbach's α: | | .703 | .702 | .703 |
| | | .841 | | |

### 4.3.3 Entrepreneurial Self-Efficacy (ESE)

**Table 7:** KMO and Bartlett's Test for Entrepreneurial Self-Efficacy (ESE)

| KMO and Bartlett's Test | | Value |
|---|---|---|
| KMO Measure of Sampling Adequacy | | .897 |
| Bartlett's Test of Sphericity | $\chi^2$ | 1231.628 |
| | df | 36 |
| | Sig. (p) | .000 |

Prior to conducting the factor analysis, the KMO and Bartlett's test of sphericity were performed. The KMO measure of sampling adequacy was .897, indicating that the collected sample was appropriate for factor analysis. In addition, Bartlett's test yielded a chi-square value of 1208.820 (df = 36, $p < .001$), confirming that statistically significant correlations existed among the variables, thereby meeting the conditions for conducting factor analysis. The exploration factor analysis extracted a single factor for entrepreneurial self-efficacy, with an eigenvalue of 3.938 and an explained variance of 43.759%. The reliability analysis showed that the scale yielded a Cronbach's α of .839, indicating high internal consistency and confirming that the measurement instrument was reliable.

**Table 8:**Factor Analysis and Reliability of Entrepreneurial Self-Efficacy (ESE)

| Factor | Measurement Item | Factor Loading |
|---|---|---|
| Entrepreneurial Self-Efficacy | Ability to present a business idea to the market | 0.571 |
| | Ability to build a team and perform leadership roles effectively | 0.677 |
| | Ability to prepare a business plan and establish execution strategies | 0.638 |
| | Ability to solve anticipated difficulties independently | 0.707 |
| | Confidence in financial management, budgeting, and cost analysis | 0.679 |
| | Ability to identify customer needs and communicate effectively | 0.651 |
| | Ability to handle administrative tasks necessary for business operations | 0.653 |
| | Ability to secure initial funding and attract external resources | 0.694 |
| | Ability to negotiate favorable terms in business deals | 0.675 |
| Eigenvalue | | 3.938 |
| Explained variance (%): | | 43.759 |
| Cumulative variance explained (%): | | 43.759 |
| Cronbach's α | | .839 |

### 4.3.4 Market Opportunity Recognition (MOR)

**Table 9:** KMO and Bartlett's Test for Market Opportunity Recognition (MOR)

| KMO and Bartlett's Test | | Value |
|---|---|---|
| KMO Measure of Sampling Adequacy | | KMO Measure of Sampling Adequacy |
| Bartlett's Test of Sphericity | 1410.055 | 1410.055 |
| | 45 | 45 |
| | .000 | .000 |

The KMO measure of sampling adequacy was .910, indicating that the sample was highly suitable for factor analysis. Bartlett's test of sphericity produced a chi-square value of 1410.055 (df = 45, $p < .001$), demonstrating that statistically significant correlations existed among the variables and that the data met the conditions required for factor analysis. The exploratory factor analysis extracted a single factor for market opportunity recognition, with an eigenvalue of 4.283 and an explained variance of 42.825%.

The reliability analysis yielded a Cronbach's α of .850, indicating high internal consistency and confirming that the MOR scale functioned as a reliable measurement instrument in this study.

**Table 10:** Factor Analysis and Reliability of Market Opportunity Recognition (MOR)

| Factor | Measurement Item | Factor Loading |
|---|---|---|
| Market Opportunity Recognition | Ability to quickly identify new customer needs | 0.539 |
| | Ability to generate ideas for improving existing products/services | 0.728 |
| | Ability to respond sensitively to changes in consumer behavior | 0.709 |
| | Ability to turn customer inconveniences into business opportunities | 0.574 |
| | Ability to interpret emerging technologies as business opportunities | 0.722 |
| | Ability to respond sensitively to market trends and competitor changes | 0.706 |
| | Ability to discover new business opportunities through networks | 0.625 |
| | Ability to collect trends from diverse information sources and apply them to business | 0.649 |
| | Ability to perceive market inefficiencies as opportunities | 0.679 |
| | Ability to generate new business opportunities from industry convergence | 0.581 |
| Eigenvalue | | 4.283 |
| Explained variance (%): | | 42.825 |
| Cumulative variance explained (%): | | 42.825 |
| Cronbach's α | | .850 |

### 4.3.5 Entrepreneurial Intention (EI)

**Table 11:** KMO and Bartlett's Test for Entrepreneurial Intention (EI)

| KMO and Bartlett's Test | | Value |
|---|---|---|
| KMO Measure of Sampling Adequacy | | .910 |
| Bartlett's Test of Sphericity | $\chi^2$ | 1013.094 |
| | df | 28 |
| | Sig. (p) | .000 |

The KMO measure of sampling adequacy was .887, indicating that the data were appropriate for factor analysis. Bartlett's test of sphericity produced a chi-square value of 1013.094 (df = 28, p < .001), confirming the existence of significant correlations among the variables and the suitability of the data for factor analysis. The exploratory factor analysis extracted a single factor for entrepreneurial intention, with an eigenvalue of 3.589 and an explained variance of 44.865%, suggesting that the items consistently represented a common construct. The reliability analysis yielded a Cronbach's α of .824, demonstrating strong internal consistency and confirming that the entrepreneurial intention scale functioned as a reliable and valid measurement instrument in this study.

**Table 12:** Factor Analysis and Reliability of Entrepreneurial Intention (EI)

| Factor | Measurement Item | Factor Loading |
|---|---|---|
| Entrepreneurial Intention | Plan to start or expand a business within the next few years | 0.562 |
| | Have specific plans and considerations for entrepreneurship and business | 0.696 |
| | Consider entrepreneurship a realistic career option | 0.680 |
| | Ability to take action to realize business ideas | 0.701 |
| | Prefer owning and managing a brand/business over stable employment | 0.673 |
| | Believe entrepreneurship enables achieving desired lifestyle and values | 0.698 |
| | High likelihood of participating in entrepreneurship-related education or training | 0.672 |
| | Willingness to carefully evaluate risks and benefits before starting a business | 0.666 |
| Eigenvalue | | 3.589 |
| Explained variance (%): | | 44.865 |
| Cumulative variance explained (%): | | 44.865 |
| Cronbach's α | | .824 |

## 4.4. Hypothesis Testing (Mediation and Sequential Mediation Analysis)

To provide an overview, Table 13 presents a consolidated summary of all mediation and sequential mediation results, and Figure 2 illustrates the overall path diagram with standardized coefficients. The following subsections (Tables 14–25) provide detailed results for each dimension.

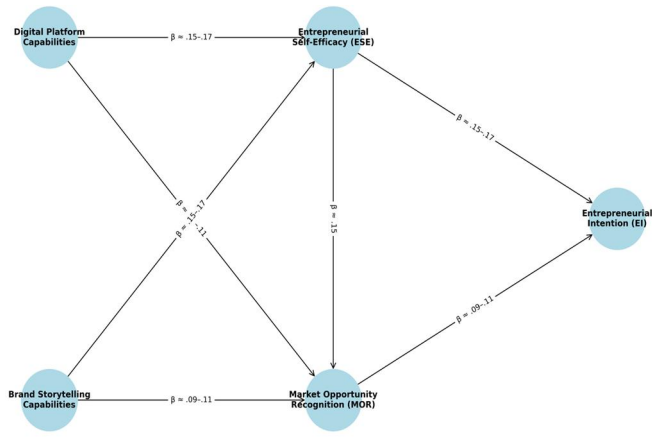


**Figure 2:** Path Diagram of Mediation and Sequential Mediation Effects

**Table 13:** Summary Table of Mediation and Sequential Mediation Effects

| Predictor (Dimension) | Mediator(s) | Effect | BootSE | 95% CI (LL, UL) | Result |
|---|---|---|---|---|---|
| Multi-channel operation | ESE → EI | .1708 | .0307 | [.1137, .2348] | Significant |
| Multi-channel operation | MOR → EI | .0956 | .0203 | [.0572, .1367] | Significant |
| Multi-channel operation | ESE → MOR → EI (Sequential) | .1627 | .0227 | [.1209, .2100] | Significant |
| Digital content planning | ESE → EI | .1634 | .0277 | [.1108, .2197] | Significant |
| Digital content planning | MOR → EI | .1047 | .0210 | [.0652, .1478] | Significant |
| Digital content planning | ESE → MOR → EI (Sequential) | .1501 | .0222 | [.1092, .1962] | Significant |
| AI utilization | ESE → EI | .1541 | .0274 | [.1047, .2119] | Significant |
| AI utilization | MOR → EI | .0920 | .0185 | [.0592, .1310] | Significant |
| AI utilization | ESE → MOR → EI (Sequential) | .1459 | .0202 | [.1082, .1822] | Significant |
| Data-driven decision-making | ESE → EI | .1642 | .0280 | [.1113, .2208] | Significant |
| Data-driven decision-making | MOR → EI | .1093 | .0197 | [.0735, .1499] | Significant |
| Data-driven decision-making | ESE → MOR → EI (Sequential) | .1449 | .0223 | [.1040, .1919] | Significant |
| Narrative construction | ESE → EI | .1534 | .0302 | [.0983, .2159] | Significant |
| Narrative construction | MOR → EI | .0939 | .0205 | [.0571, .1381] | Significant |
| Narrative construction | ESE → MOR → EI (Sequential) | .1505 | .0220 | [.1095, .1957] | Significant |
| Identity expression | ESE → EI | .1614 | .0301 | [.1060, .2240] | Significant |
| Identity expression | MOR → EI | .0990 | .0205 | [.0602, .1399] | Significant |
| Identity expression | ESE → MOR → EI (Sequential) | .1504 | .0236 | [.1081, .1991] | Significant |
| Social media response util. | ESE → EI | .1671 | .0294 | [.1117, .2269] | Significant |
| Social media response util. | MOR → EI | .1083 | .0193 | [.0722, .1479] | Significant |
| Social media response util. | ESE → MOR → EI (Sequential) | .1515 | .0209 | [.1127, .1949] | Significant |

**Table 14:** Mediation Effect of Entrepreneurial Self-Efficacy in the Relationship between Digital Platform Capability and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Multi-channel Operation → ESE → EI | .3335 | .0343 | .2694 | .4030 |
| Digital Content Planning → ESE → EI | .3135 | .0317 | .2537 | .3767 |
| AI Utilization → ESE → EI | .3000 | .0324 | .2408 | .3669 |
| Data-driven Decision-making → ESE → EI | .3092 | .0323 | .2485 | .3745 |

The results are presented in Table 13. First, the indirect effect of multi-channel operation on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .3335, BootSE = .0343, 95% CI [.2694, .4030]), as the confidence interval did not include zero. This indicates that higher multi-channel operation capability enhances entrepreneurial self-efficacy, which in turn strengthens entrepreneurial intention. Second, the indirect effect of digital content planning was also significant (Effect = .3135, BootSE = .0317, 95% CI [.2537, .3767]). This suggests that as digital content planning capability improves, entrepreneurial self-efficacy increases, thereby promoting entrepreneurial intention. Third, the indirect effect of AI utilization was significant (Effect = .3000, BootSE = .0324, 95% CI [.2408, .3669]), indicating that greater AI utilization enhances entrepreneurial self-efficacy, which subsequently leads to stronger entrepreneurial intention.

Finally, data-driven decision-making demonstrated a significant indirect effect (Effect = .3092, BootSE = .0323, 95% CI [.2485, .3745]), showing that higher capability in data-driven decision-making increases entrepreneurial self-efficacy, which in turn reinforces entrepreneurial intention.

**Table 15:** Mediation Effect of Entrepreneurial Self-Efficacy in the Relationship between Brand Storytelling Capability and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Narrative Construction → ESE → EI | .3039 | .0344 | .2397 | .3743 |
| Identity Expression → ESE → EI | .3118 | .0374 | .2428 | .3886 |
| Social Media Response Utilization → ESE → EI | .3186 | .0326 | .2568 | .3848 |

The results are shown in Table 14. First, the indirect effect of narrative construction on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect

= .3039, BootSE = .0344, 95% CI [.2397, .3743]), as zero was not included in the confidence interval. This indicates that stronger narrative construction is positively associated with entrepreneurial self-efficacy, which in turn is related to higher entrepreneurial intention. Second, the indirect effect of identity expression on entrepreneurial intention through entrepreneurial self-efficacy was also significant (Effect = .3118, BootSE = .0374, 95% CI [.2428, .3886]). This suggests that higher levels of identity expression are positively related to entrepreneurial self-efficacy, which is in turn associated with entrepreneurial intention. Third, the indirect effect of social media response utilization on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .3186, BootSE = .0326, 95% CI [.2568, .3848]). This implies that greater utilization of social media responses enhances entrepreneurial self-efficacy, leading to increased entrepreneurial intention.

**Table 16:** Mediation Effect of Market Opportunity Recognition in the Relationship between Digital Platform Capability and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Multi-channel Operation → MOR → EI | .3676 | .0322 | .3052 | .4306 |
| Digital Content Planning → MOR → EI | .3742 | .0341 | .3093 | .4424 |
| AI Utilization → MOR → EI | .3466 | .0328 | .2852 | .4138 |
| Data-driven Decision-making → MOR → EI | .3737 | .0314 | .3128 | .4362 |

The results are presented in Table 15. First, the indirect effect of multi-channel operation capability on entrepreneurial intention through market opportunity recognition was significant (Effect = .3676, BootSE = .0322, 95% CI [.3052, .4306]), as zero was not included in the confidence interval. This indicates that higher multi-channel capability enhances market opportunity recognition, which in turn strengthens entrepreneurial intention.

Second, the indirect effect of digital content planning capability on entrepreneurial intention via market opportunity recognition was also significant (Effect = .3742, BootSE = .0341, 95% CI [.3093, .4424]). This suggests that greater content planning capability improves opportunity recognition, thereby reinforcing entrepreneurial intention.

Third, the indirect effect of AI utilization capability on entrepreneurial intention mediated by market opportunity recognition was significant (Effect = .3466, BootSE = .0328, 95% CI [.2852, .4138]). This means that higher AI capability leads to stronger opportunity recognition, which subsequently contributes to increased entrepreneurial intention.

Finally, the indirect effect of data-driven decision-making capability on entrepreneurial intention through market opportunity recognition was significant (Effect = .3737, BootSE = .0314, 95% CI [.3128, .4362]). This finding implies that as entrepreneurs enhance their data-driven decision-making capability, their recognition of market opportunities improves, which ultimately leads to stronger entrepreneurial intention.

**Table 17:** Mediation Effect of Market Opportunity Recognition in the Relationship between Brand Storytelling Capability and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Narrative Construction → MOR → EI | .3320 | .0323 | .2712 | .3973 |
| Identity Expression → MOR → EI | .3586 | .0328 | .2968 | .4266 |
| Social Media Response Utilization → MOR → EI | .3812 | .0312 | .3205 | .4437 |

The results are summarized in Table 16. First, the indirect effect of narrative construction on entrepreneurial intention through market opportunity recognition was significant (Effect = .3320, BootSE = .0323, 95% CI [.2712, .3973]), as zero was not included in the confidence interval. This indicates that stronger narrative construction enhances market opportunity recognition, which in turn increases entrepreneurial intention. Second, identity expressions also exhibited a significant indirect effect (Effect = .3586, BootSE = .0328, 95% CI [.2968, .4266]). This suggests that higher levels of identity expression improve market opportunity recognition, thereby reinforcing entrepreneurial intention. Third, the indirect effect of social media response utilization on entrepreneurial intention via market opportunity recognition was significant (Effect = .3812, BootSE = .0312, 95% CI [.3205, .4437]). This result implies that greater utilization of social media responses strengthens market opportunity recognition, which subsequently contributes to higher entrepreneurial intention.

**Table 18:** Mediation Effect of Market Opportunity Recognition in the Relationship between Entrepreneurial Self-Efficacy and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Entrepreneurial Self-Efficacy → MOR → EI | .3945 | .0415 | .3141 | .4760 |

The results are presented in Table 17. The indirect effect of entrepreneurial self-efficacy on entrepreneurial intention through market opportunity recognition was significant (Effect = .3945, BootSE = .0415, 95% CI [.3141, .4760]), as

zero was not included in the confidence interval. This finding indicates that higher entrepreneurial self-efficacy enhances market opportunity recognition, and this improvement in recognition subsequently strengthens entrepreneurial intention, confirming the significance of the mediating effect.

**Table 19:** Sequential Mediation Effects of Entrepreneurial Self-Efficacy and Market Opportunity Recognition in the Relationship between Multi-channel Operation and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Multi-channel Operation → ESE → EI | .1708 | .0307 | .1137 | .2348 |
| Multi-channel Operation → MOR → EI | .0956 | .0203 | .0572 | .1367 |
| Multi-channel Operation → ESE → MOR → EI | .1627 | .0227 | .1209 | .2100 |
| Total Indirect Effect | .4292 | .0359 | .3610 | .5012 |

Using PROCESS Macro Model 6, the mediating and sequential mediating effects of entrepreneurial self-efficacy and market opportunity recognition were tested, and the results are summarized in Table 18. First, the indirect effect of multi-channel operation on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .1708, BootSE = .0307, 95% CI [.1137, .2348]), as zero was not included in the confidence interval. This indicates that higher multi-channel operation capability enhances entrepreneurial self-efficacy, which in turn strengthens entrepreneurial intention. Second, the indirect effect of multi-channel operation through market opportunity recognition was also significant (Effect = .0956, BootSE = .0203, 95% CI [.0572, .1367]). This result suggests that greater multi-channel operation capability improves recognition of market opportunities, thereby contributing to increased entrepreneurial intention. Third, the sequential mediation effect of entrepreneurial self-efficacy and market opportunity recognition in the relationship between multi-channel operation and entrepreneurial intention was significant (Effect = .1627, BootSE = .0227, 95% CI [.1209, .2100]). This implies that multi-channel operation strengthens entrepreneurial self-efficacy, which subsequently enhances market opportunity recognition, ultimately leading to higher entrepreneurial intention.

Finally, the total indirect effect across all three pathways was .4292 and statistically significant (BootSE = .0359, 95% CI [.3610, .5012]). This suggests that the influence of multi-channel operation capability on entrepreneurial intention is more strongly conveyed through the mediating roles of entrepreneurial self-efficacy and market opportunity recognition than through direct effects.

**Table 20:** Sequential Mediation Effects of Entrepreneurial Self-Efficacy and Market Opportunity Recognition in the Relationship between Digital Content Planning and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Digital Content Planning → ESE → EI | .1634 | .0277 | .1108 | .2197 |
| Digital Content Planning → MOR → EI | .1047 | .0210 | .0652 | .1478 |
| Digital Content Planning → ESE → MOR → EI | .1501 | .0222 | .1092 | .1962 |
| Total Indirect Effect | .4183 | .0350 | .3515 | .4893 |

Using PROCESS Macro Model 6, the mediating and sequential mediating effects of entrepreneurial self-efficacy and market opportunity recognition were tested, and the results are presented in Table 19. First, the indirect effect of digital content planning on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .1634, BootSE = .0277, 95% CI [.1108, .2197]), as zero was not included in the confidence interval. This indicates that stronger digital content planning capability enhances entrepreneurial self-efficacy, which in turn strengthens entrepreneurial intention. Second, the indirect effect through market opportunity recognition was also significant (Effect = .1047, BootSE = .0210, 95% CI [.0652, .1478]). This suggests that higher levels of content planning improve market opportunity recognition, thereby contributing to increased entrepreneurial intention. Third, the sequential mediation effect of entrepreneurial self-efficacy and market opportunity recognition in the relationship between digital content planning and entrepreneurial intention was significant (Effect = .1501, BootSE = .0222, 95% CI [.1092, .1962]). This result implies that enhanced content planning strengthens entrepreneurial self-efficacy, which subsequently increases market opportunity recognition, ultimately leading to higher entrepreneurial intention.

**Table 21:** Sequential Mediation Effects of Entrepreneurial Self-Efficacy and Market Opportunity Recognition in the Relationship between AI Utilization and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| AI Utilization → ESE → EI | .1541 | .0274 | .1047 | .2119 |
| AI Utilization → MOR → EI | .0920 | .0185 | .0592 | .1310 |
| AI Utilization → ESE → MOR → EI | .1459 | .0202 | .1082 | .1822 |
| Total Indirect Effect | .3920 | .0354 | .3270 | .4645 |

Using PROCESS Macro Model 6, the mediating and sequential mediating effects of entrepreneurial self-efficacy and market opportunity recognition were examined, and the results are shown in Table 20. First, the indirect effect of AI utilization on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .1541, BootSE = .0274, 95% CI [.1047, .2119]), as the confidence interval did not include zero. This indicates that greater AI utilization is positively associated with entrepreneurial self-efficacy, which in turn is linked to entrepreneurial intention. Second, the indirect effect through market opportunity recognition was also significant (Effect = .0920, BootSE = .0185, 95% CI [.0592, .1310]). This suggests that improved AI utilization increases recognition of market opportunities, which subsequently contributes to higher entrepreneurial intention. Third, the sequential mediation effect of entrepreneurial self-efficacy and market opportunity recognition in the relationship between AI utilization and entrepreneurial intention was significant (Effect = .1459, BootSE = .0202, 95% CI [.1082, .1822]). This finding implies that AI utilization enhances entrepreneurial self-efficacy, which then strengthens market opportunity recognition, ultimately leading to greater entrepreneurial intention.

Finally, the total indirect effect across all three pathways was .3920 and statistically significant (BootSE = .0354, 95% CI [.3270, .4645]). This indicates that entrepreneurial self-efficacy and market opportunity recognition play critical roles in the process through which AI utilization capability influences entrepreneurial intention.

**Table 22:** Sequential Mediation Effects of Entrepreneurial Self-Efficacy and Market Opportunity Recognition in the Relationship between Data-driven Decision-making and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Data-driven Decision-making → ESE → EI | .1642 | .0280 | .1113 | .2208 |
| Data-driven Decision-making → MOR → EI | .1093 | .0197 | .0735 | .1499 |
| Data-driven Decision-making → ESE → MOR → EI | .1449 | .0223 | .1040 | .1919 |
| Total Indirect Effect | .4184 | .0338 | .3520 | .4852 |

Using PROCESS Macro Model 6, the mediating and sequential mediating effects of entrepreneurial self-efficacy and market opportunity recognition were analyzed, and the results are shown in Table 21. First, the indirect effect of data-driven decision-making capability on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .1642, BootSE = .0280, 95% CI [.1113, .2208]), as zero was not included in the confidence interval. This indicates that stronger reliance on data-driven decision-making enhances entrepreneurial self-efficacy, which in turn strengthens entrepreneurial intention. Second, the indirect effect through market opportunity recognition was also significant (Effect = .1093, BootSE = .0197, 95% CI [.0735, .1499]). This suggests that higher levels of data-driven decision-making improve recognition of market opportunities, thereby contributing to greater entrepreneurial intention. Third, the sequential mediation effect of entrepreneurial self-efficacy and market opportunity recognition in the relationship between data-driven decision-making and entrepreneurial intention was significant (Effect = .1449, BootSE = .0223, 95% CI [.1040, .1919]). This finding demonstrates that data-driven decision-making strengthens entrepreneurial self-efficacy, which subsequently enhances market opportunity recognition, ultimately leading to increased entrepreneurial intention.

Finally, the total indirect effect across all three mediation pathways was .4184 and statistically significant (BootSE = .0338, 95% CI [.3520, .4852]). This confirms that entrepreneurial self-efficacy and market opportunity recognition serve as important mediating mechanisms in the process through which data-driven decision-making capability influences entrepreneurial intention.

**Table 23:** Sequential Mediation Effects of Entrepreneurial Self-Efficacy and Market Opportunity Recognition in the Relationship between Narrative Construction and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Narrative Construction → ESE → EI | .1534 | .0302 | .0983 | .2159 |
| Narrative Construction → MOR → EI | .0939 | .0205 | .0571 | .1381 |
| Narrative Construction → ESE → MOR → EI | .1505 | .0220 | .1095 | .1957 |
| Total Indirect Effect | .3978 | .0362 | .3307 | .4727 |

Using PROCESS Macro Model 6, the mediating and sequential mediating effects of entrepreneurial self-efficacy and market opportunity recognition were analyzed, and the results are presented in Table 22. First, the indirect effect of narrative construction on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .1534, BootSE = .0302, 95% CI [.0983, .2159]), as zero was not included in the confidence interval. This suggests that stronger narrative construction capability enhances entrepreneurial self-efficacy, which in turn increases entrepreneurial intention.

Second, the indirect effect through market opportunity

recognition was also significant (Effect = .0939, BootSE = .0205, 95% CI [.0571, .1381]). This indicates that higher levels of narrative construction improve recognition of market opportunities, thereby contributing to the enhancement of entrepreneurial intention. Third, the sequential mediation effect of entrepreneurial self-efficacy and market opportunity recognition in the relationship between narrative construction and entrepreneurial intention was significant (Effect = .1505, BootSE = .0220, 95% CI [.1095, .1957]). This finding implies that narrative construction strengthens entrepreneurial self-efficacy, which subsequently increases market opportunity recognition, ultimately leading to greater entrepreneurial intention.

Finally, the total indirect effect across all three pathways was .3978 and statistically significant (BootSE = .0362, 95% CI [.3307, .4727]). This confirms that entrepreneurial self-efficacy and market opportunity recognition play key mediating roles in the process through which narrative construction influences entrepreneurial intention.

**Table 24:** Sequential Mediation Effects of Entrepreneurial Self-Efficacy and Market Opportunity Recognition in the Relationship between Identity Expression and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Identity Expression → ESE → EI | .1614 | .0301 | .1060 | .2240 |
| Identity Expression → MOR → EI | .0990 | .0205 | .0602 | .1399 |
| Identity Expression → ESE → MOR → EI | .1504 | .0236 | .1081 | .1991 |
| Total Indirect Effect | .4107 | .0365 | .3417 | .4853 |

Using PROCESS Macro Model 6, the mediating and sequential mediating effects of entrepreneurial self-efficacy and market opportunity recognition were analyzed, and the results are presented in Table 23. First, the indirect effect of identity expression on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .1614, BootSE = .0301, 95% CI [.1060, .2240]), as the confidence interval did not include zero. This suggests that stronger identity expression capability enhances entrepreneurial self-efficacy, which in turn increases entrepreneurial intention.

Second, the indirect effect through market opportunity recognition was also significant (Effect = .0990, BootSE = .0205, 95% CI [.0602, .1399]). This indicates that higher levels of identity expression improve recognition of market opportunities, thereby contributing to the strengthening of entrepreneurial intention. Third, the sequential mediation effect of entrepreneurial self-efficacy and market opportunity recognition in the relationship between identity expression and entrepreneurial intention was significant (Effect = .1504, BootSE = .0236, 95% CI [.1081, .1991]). This finding implies that identity expression strengthens entrepreneurial self-efficacy, which subsequently enhances market opportunity recognition, ultimately leading to higher entrepreneurial intention.

Finally, the total indirect effect across all three pathways was .4107 and statistically significant (BootSE = .0365, 95% CI [.3417, .4853]). This confirms that entrepreneurial self-efficacy and market opportunity recognition serve as important mediators in the process through which identity expression influences entrepreneurial intention.

**Table 25:** Sequential Mediation Effects of Entrepreneurial Self-Efficacy and Market Opportunity Recognition in the Relationship between Social Media Response Utilization and Entrepreneurial Intention

| Path | Effect | BootSE | 95% Confidence Interval (95% CI) | |
|---|---|---|---|---|
| | | | LLCI (95% CI) | ULCI (95% CI) |
| Social Media Response Utilization → ESE → EI | .1671 | .0294 | .1117 | .2269 |
| Social Media Response Utilization → MOR → EI | .1083 | .0193 | .0722 | .1479 |
| Social Media Response Utilization → ESE → MOR → EI | .1515 | .0209 | .1127 | .1949 |
| Total Indirect Effect | .4269 | .0333 | .3631 | .4937 |

Using PROCESS Macro Model 6, the mediating and sequential mediating effects of entrepreneurial self-efficacy and market opportunity recognition were analyzed, and the results are presented in Table 24. First, the indirect effect of social media response utilization on entrepreneurial intention through entrepreneurial self-efficacy was significant (Effect = .1671, BootSE = .0294, 95% CI [.1117, .2269]), as zero was not included in the confidence interval. This indicates that greater use of social media responses is positively related to entrepreneurial self-efficacy, which is in turn associated with entrepreneurial intention. Second, the indirect effect through market opportunity recognition was also significant (Effect = .1083, BootSE = .0193, 95% CI [.0722, .1479]). This suggests that higher levels of social media response utilization improve recognition of market opportunities, which in turn contributes to increased entrepreneurial intention.

Third, the sequential mediation effect of entrepreneurial self-efficacy and market opportunity recognition in the relationship between social media response utilization and entrepreneurial intention was significant (Effect = .1515, BootSE = .0209, 95% CI [.1127, .1949]). This finding implies that social media response utilization enhances entrepreneurial self-efficacy, which then boosts market opportunity recognition, ultimately leading to stronger

entrepreneurial intention.

Finally, the total indirect effect across all three pathways was .4269 and statistically significant (BootSE = .0333, 95% CI [.3631, .4937]). This indicates that entrepreneurial self-efficacy and market opportunity recognition play crucial mediating roles in the process through which social media response utilization influences entrepreneurial intention.

In addition to the indirect and sequential mediation effects, the direct effects of digital platform capability and brand storytelling capability on entrepreneurial intention were also examined. The results indicated that these direct paths were statistically significant, confirming that the independent variables influence entrepreneurial intention both directly and indirectly. Figure 2 provides a comprehensive path diagram with standardized coefficients, illustrating the strength and direction of all significant relationships in the model.

## 5. Discussions

This study examined how digital platform utilization and brand storytelling capabilities influence entrepreneurial intention (EI) via entrepreneurial self-efficacy (ESE) and market opportunity recognition (MOR) in the beauty industry. Extending prior models such as the Theory of Planned Behavior and ESE-centered approaches, our framework integrates digital and narrative capabilities as key cognitive and psychological resources in the platform economy.

Findings showed that all four digital sub-dimensions (multi-channel operation, content planning, AI utilization, data-driven decision-making) and three storytelling sub-dimensions (narrative construction, identity expression, social media response utilization) positively affected EI through ESE and MOR. Importantly, the sequential mediation (ESE → MOR → EI) consistently emerged, underscoring that entrepreneurs first build confidence and then translate it into market sensitivity and intention.

These results highlight storytelling not only as a marketing device but also as a psychological resource that reinforces efficacy and opportunity recognition. They also emphasize the importance of sequencing in entrepreneurial education—building self-efficacy before training on market analysis. Academically, this study advances entrepreneurship research by conceptualizing digital and storytelling capabilities as multidimensional constructs and empirically verifying their sequential mediating pathways. Methodologically, as the PROCESS macro was used, confirmatory factor analysis and measurement invariance could not be tested, suggesting that future research employ SEM to validate the measurement model and enhance robustness.

## 6. Conclusions

This study examined how digital platform utilization and brand storytelling capabilities shape entrepreneurial intention in the beauty industry through entrepreneurial self-efficacy (ESE) and market opportunity recognition (MOR). Results showed that both capabilities positively influenced ESE and MOR, which in turn strengthened entrepreneurial intention, with a consistent sequential pathway of ESE → MOR → EI. Academically, the study conceptualizes digital and storytelling capabilities as multidimensional constructs and verifies their cognitive and psychological mechanisms. Practically, it suggests that entrepreneurial education should include modules on multi-channel management, AI, data-driven decision-making, and brand narrative building, emphasizing that enhancing ESE reinforces MOR and entrepreneurial intention. Limitations include the cross-sectional design, lack of CFA and measurement invariance testing, and reliance on self-reported data. Future research should adopt longitudinal designs, cross-national samples, and procedural remedies for common method bias. In conclusion, digital and storytelling capabilities are critical for beauty entrepreneurs, providing pathways to intention formation and offering implications for startups, influencers, and e-commerce entrepreneurs in building competitiveness through narrative, consumer response integration, and data-driven strategies.

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## Declarations

**Ethics Approval and Consent to Participate**

This study did not require approval from an Institutional Review Board because it did not involve any intervention or the collection of sensitive personal information. All participants were informed about the purpose of the research and voluntarily agreed to participate by providing informed consent prior to completing the survey.

**Conflicts of Interest**

The authors declare that they have no competing interests.

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**Author Contributions**

Hyejeong Koo: Conceptualization, Methodology, Data Analysis, Writing Original Draft, Visualization.
Ki Han Kwon: Supervision, Methodological Guidance, Writing Review & Editing.
All authors have read and approved the final manuscript.

## Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## Declaration of Generative AI and AI-assisted Technologies in the Writing Process

No generative AI or AI-assisted tools were used in the writing, editing, or analysis of this manuscript.

## References


Agu, E. E., Nwabekee, U. S., Ijomah, T. I., & Abdul-Azeez, O. Y. (2024). The role of strategic business leadership in driving product marketing success: Insights from emerging markets. *International Journal of Frontline Research in Science and Technology, 3*(2), 1–18. https://doi.org/10.56355/ijf rst.2024.3.2.0044

Adeleke, A. G., Sanyaolu, T. O., Efunniyi, C. P., Akwawa, L. A., Azubuko, C. F., Leenit, U. K., & OneAdvanced, U. K. (2022). Impact of AI-enabled A/B testing on product performance in e-commerce platforms. *International Journal of Management & Entrepreneurship Research, 4*(12), 795–813. https://doi.org/10.51594/ijmer.v4i12.1537

Alves Gomes, M., & Meisen, T. (2023). A review on customer segmentation methods for personalized customer targeting in e-commerce use cases. *Information Systems and e-Business Management, 21*(3), 527–570. https://doi.org/10.1007/s10257-023-00640-4

Ardichvili, A., Cardozo, R., & Ray, S. (2003). A theory of entrepreneurial opportunity identification and development. *Journal of Business Venturing, 18*(1), 105–123. https://doi.org/10.1016/S0883-9026(01)00068-4

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Prentice-Hall.

Baron, R. A. (2006). Opportunity recognition as pattern recognition: How entrepreneurs "connect the dots" to identify new business opportunities. *Academy of Management Perspectives, 20*(1), 104–119. https://doi.org/10.5465/amp.2006.19873412

Bruhn, M., Schoenmüller, V., Schäfer, D., & Heinrich, D. (2012). Brand authenticity: Towards a deeper understanding of its conceptualization and measurement. In *Advances in Consumer Research* (Vol. 40, pp. 567–573). Association for Consumer Research.

Campagna, C. L., Donthu, N., & Yoo, B. (2023). Brand authenticity: Literature review, comprehensive definition, and an amalgamated scale. *Journal of Marketing Theory and Practice, 31*(2), 129–145. https://doi.org/10.1080/10696679.2021.2018937

Chaffey, D., & Smith, P. R. (2022). *Digital marketing excellence: Planning, optimizing and integrating online marketing* (6th ed.). Routledge.

Chandra, S., Verma, S., Lim, W. M., Kumar, S., & Donthu, N. (2022). Personalization in personalized marketing: Trends and ways forward. *Psychology & Marketing,* 39(8), 1529–1562. https://doi.org/10.1016/S0883-9026(97)00029-3

Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing, 13*(4), 295–316. https://doi.org/10.1016/S0883-9026(97)00029-3

De Freitas, J., Nave, G., & Puntoni, S. (2025). Ideation with generative AI—in consumer research and beyond. *Journal of Consumer Research, 52*(1), 18–31. https://doi.org/10.1093/jcr/ucaf012

Escalas, J. E. (2004). Narrative processing: Building consumer connections to brands. *Journal of Consumer Psychology, 14*(1–2), 168–180. https://doi.org/10.1207/s15327663jcp1401&2_19

Fayolle, A., Liñán, F., & Moriano, J. A. (2014). Beyond entrepreneurial intentions: Values and motivations in entrepreneurship. *International Entrepreneurship and Management Journal, 10*(4), 679–689. https://doi.org/10.1007/s11365-014-0306-7

Fiet, J. O. (2007). A prescriptive analysis of search and discovery. *Journal of Management Studies, 44*(4), 592–611. https://doi.org/10.1111/j.1467-6486.2006.00671.x

Hayes, A. F. (2022). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (3rd ed.). Guilford Press.

Hollebeek, L. D., Glynn, M. S., & Brodie, R. J. (2014). Consumer brand engagement in social media: Conceptualization, scale development and validation. *Journal of Interactive Marketing, 28*(2), 149–165. https://doi.org/10.1016/j.intmar.2013.12.002

Islam, M. M., Ahmed, F., Kabir, M. A., & Ahmed, M. R. (2025). The impact of short video content and social media influencers on digital marketing success: A systematic literature review of smartphone usage. *Innovatech Engineering Journal, 1*(2), 1–17. https://doi.org/10.70937/faet.v1i02.46

Kar, S. (2023). Impact of artificial intelligence on digital marketing. *International Journal of Scientific Research in Engineering and Management, 7*(7), 625–631. https://doi.org//10.55041/IJSREM25001

Kirzner, I. M. (2015). *Competition and entrepreneurship.* University of Chicago Press.

Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.

Korzynski, P., Mazurek, G., Altmann, A., Ejdys, J., Kazlauskaite, R., Paliszkiewicz, J., & Ziemba, E. (2023). Generative artificial intelligence as a new context for management theories: Analysis of ChatGPT. *Central European Management Journal, 31*(1), 3–13. https://doi.org/10.1108/CEMJ-02-2023-0091

Krishen, A. S., & Petrescu, M. (2019). Data-driven decision making: Implementing analytics to transform academic culture. *Journal of Marketing Analytics, 7*(2), 51–53. https://doi.org/10.1057/s41270-019-00056-5

Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing

models of entrepreneurial intentions. *Journal of Business Venturing, 15*(5–6), 411–432. https://doi.org/10.1016/S0883-9026(98)00033-0

Lee, L., Wong, P. K., Foo, M. D., & Leung, A. (2011). Entrepreneurial intentions: The influence of organizational and individual factors. *Journal of Business Venturing, 26*(1), 124–136. https://doi.org/10.1016/j.jbusvent.2009.04.003

Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice, 33*(3), 593–617. https://doi.org/10.1111/j.1540-6520.2009.00318.x

Liñán, F., Rodríguez-Cohard, J. C., & Rueda-Cantuche, J. M. (2011). Factors affecting entrepreneurial intention levels: A role for education. *International Entrepreneurship and Management Journal, 7*(2), 195–218. https://doi.org/10.1007/s11365-010-0154-z

McGee, J. E., Peterson, M., Mueller, S. L., & Sequeira, J. M. (2009). Entrepreneurial self-efficacy: Refining the measure. *Entrepreneurship Theory and Practice, 33*(4), 965–988. https://doi.org/10.1111/j.1540-6520.2009.00304.x

Muntinga, D. G., Moorman, M., & Smit, E. G. (2011). Introducing COBRAs: Exploring motivations for brand-related social media use. *International Journal of Advertising, 30*(1), 13–46. https://doi.org/10.2501/IJA-30-1-013-046

Ozgen, E., & Baron, R. A. (2007). Social sources of information in opportunity recognition: Effects of mentors, industry networks, and professional forums. *Journal of Business Venturing, 22*(2), 174–192. https://doi.org/10.1016/j.jbusvent.2005.12.001

Papadopoulou, C., Vardarsuyu, M., & Oghazi, P. (2023). Examining the relationships between brand authenticity, perceived value, and brand forgiveness: The role of cross-cultural happiness. *Journal of Business Research, 167*, 114154. https://doi.org/10.1016/j.jbusres.2023.114154

Roy, S., Sural, S., Chhaya, N., Natarajan, A., & Ganguly, N. (2021). An integrated approach for improving brand consistency of web content: Modeling, analysis, and recommendation. *ACM Transactions on the Web, 15*(2), 1–25. https://doi.org/10.1145/3446218

Schivinski, B., Christodoulides, G., & Dabrowski, D. (2016). Measuring consumers' engagement with brand-related social-media content: Development and validation of a scale that identifies levels of social-media engagement with brands. *Journal of Advertising Research, 56*(1), 64–80. https://doi.org/10.2501/JAR-2016-004

Schivinski, B., Muntinga, D. G., Pontes, H. M., & Lukasik, P. (2021). Influencing COBRAs: The effects of brand equity on the consumer's propensity to engage with brand-related content on social media. *Journal of Strategic Marketing, 29*(1), 1–23. https://doi.org/10.1080/0965254X.2019.1572641

Sousa, R., & Voss, C. A. (2006). Service quality in multichannel services employing virtual channels. *Journal of Service Research, 8*(4), 356–371. https://doi.org/10.1177/1094670506286324

Tang, J., Kacmar, K. M., & Busenitz, L. (2012). Entrepreneurial alertness in the pursuit of new opportunities. *Journal of Business Venturing, 27*(1), 77–94. https://doi.org/10.1016/j.jbusvent.2010.07.001

Verhoef, P. C., Kannan, P. K., & Inman, J. J. (2015). From multi-channel retailing to omni-channel retailing: Introduction to the special issue on multi-channel retailing. *Journal of Retailing, 91*(2), 174–181. https://doi.org/10.1016/j.jretai.2015.02.005

Wang, Y. M., Chiou, C. C., Wang, W. C., & Chen, C. J. (2021). Developing an instrument for assessing self-efficacy in data mining and analysis. *Frontiers in Psychology, 11,* 614460. https://doi.org/10.3389/fpsyg.2020.614460

Winkler, J. R., Appel, M., Schmidt, M. L. C., & Richter, T. (2023). The experience of emotional shifts in narrative persuasion. *Media Psychology, 26*(2), 141–171. https://doi.org/10.1080/15213269.2022.2103711

Woodside, A. G., Sood, S., & Miller, K. E. (2008). When consumers and brands talk: Storytelling theory and research in psychology and marketing. *Psychology & Marketing, 25*(2), 97–145. https://doi.org/10.1002/mar.20203

Zhao, H., Seibert, S. E., & Hills, G. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology, 90*(6), 1265–1272. https://doi.org/10.1037/0021-9010.90.6.1265