Digital Transformation Strategy in SMEs: The Role of Entrepreneurs' IEO

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Abstract

This paper explores the entrepreneurial orientation factors that influence SMEs' digital transformation strategy. To achieve this, this paper proposes a conceptual framework by revisiting and extending Miller (1983) and Gerschewski et al. (2016) Individual Entrepreneurial Orientation (IEO) model (i.e., innovativeness, proactiveness, risk-taking, entrepreneurial passion, and perseverance). The proposed model is validated using Structural Equation Modelling (SEM). Our findings indicate that risk-taking and entrepreneurial passion positively affect the achievement of SMEs' digital transformation strategy goals, while proactiveness, innovativeness, and perseverance do not. To the best of our knowledge, this is the first study of its kind in this area.

Keywords*: Entrepreneurs, IEO Factors, Passion, Perseverance, and Digital Transformation strategy.*

INTRODUCTION

In today's fast-paced business world, digital transformation has become a critical component of a company's success across all industries. Digital transformation refers to the integration of digital technologies into all areas of a business, resulting in fundamental changes to how it operates. For entrepreneurs, digital transformation offers intriguing challenges, as well as new opportunities (Cohen et al., 2017; Li et al., 2018; Troise et al., 2022). New technologies such as artificial intelligence (AI), the Internet of Things (IoT), and big data are influencing not only the phenomenon of new venture creation and development (Oukil, 2011) but also the behavior of the entrepreneur (Andriole, 2017; Corvello et al., 2021). Entrepreneurs must adapt to the digital evolution because they are those individuals whose decisions determine to a large extent the strategy of the organization (usually small- to medium-sized) (Corvello et al., 2021). In other words, they design the organization (Burton et al., 2019) and define its strategy (Cullen, 2020). Moreover, a successful digital transformation needs more than just investing in new technology, it requires a strategic approach that aligns technology with business goals and objectives; it needs a digital transformation strategy. The formulation and application of a digital transformation strategy have become a critical concern for enterprises before digital transformation (Chanias et al., 2019). Developing a successful, clear, and sound digital transformation strategy, ensures that the digital transformation is as seamless as possible (Teng et al., 2022). Furthermore, a digital transformation strategy is considered a unique map that can be very helpful in business transformation (Teng et al., 2022).

Academic researchers have always been interested in determining what makes some entrepreneurs more successful than others (Donbesuur et al., 2020; Watson et al., 2020); specifically in small and medium-sized enterprises (SMEs), which typically struggle with their survival (Hyder & Lussier, 2016). Earlier, there was substantial evidence of macro-level factors and their relationship to SMEs' success, however, the focus has recently shifted to micro-level

factors, with personality traits and demographical characteristics dominating (Fatima & Bilal, 2019). Individual entrepreneurial orientation (IEO) is one such micro-level psychological construct that has received relatively little attention in entrepreneurship studies and specifically in SMEs researches (Irwin et al., 2018). SMEs owners with high IEO are likely to be more risk-taking, proactive, innovative, competitive, learning-oriented, achievement-oriented, and independent (Krauss et al., 2005), and these attitudes permit taking active actions to establish advantageous and strong collations for the success of the business (Shafi et al., 2020). To our knowledge, IEO has been linked to the success of SMEs, but rarely studied in the context of SMEs' digital transformation.

Therefore, research is required to comprehend the entrepreneur's characteristics, especially those who influence the digital transformation strategy of Moroccan companies, in order to develop effective strategies that would ensure successful digital transformation. To address this issue, the purpose of the current research, therefore, is to investigate the impact of IEO's dimensions on the digital transformation strategy of Moroccan SMEs. To be more specific, this paper proposes a conceptual framework by revisiting and extending Miller (1983) and Gerschewski et al. (2016) Individual Entrepreneurial Orientation (IEO) model (i.e., innovativeness, proactiveness, risk-taking, entrepreneurial passion, and perseverance). The analysis of the proposed framework is done through the application of Structural Equation Modelling (SEM) statistical techniques.

The rest of this document will be presented in the following manner. The second section will contain a review of previous literature on the IEO framework. The third section will introduce the proposed conceptual model and hypotheses. The fourth section will outline the research methodology utilized in this study. The fifth section will detail the findings of the analysis. The sixth section will compare and contrast these results with previous ones. Lastly, the seventh section will provide a conclusion.

LITERATURE REVIEW

The concept of entrepreneurial orientation (EO) is recognized as a critical construct that has been used in the entrepreneurship literature (Bolton & Lane, 2012; Covin & Lumpkin, 2011; Gerschewski et al., 2016; Mohammadi, 2021; Niemand et al., 2021; Wales et al., 2013). EO is defined as a method of accepting and dealing with environmental difficulties that encourage entrepreneurial behavior and promote business flexibility and adaptability (Covin & Lumpkin, 2011; V. Gupta & Gupta, 2015; Mohammadi, 2021; Rauch et al., 2009). Miller (1983) and Covin & Slevin (1989) proposed the most widely accepted definition of entrepreneurial orientation (EO), which characterizes it as the strategic mindset of a company's top management toward taking risks, being proactive, and fostering innovation (Niemand et al., 2021). In early EO research, unidimensional and multidimensional constructs were one of the major issues. Both Miller (1983) and Covin & Slevin (1989) view EO as a unidimensional approach that consists of risk-taking, innovativeness, and proactiveness (Gerschewski et al., 2016). The multidimensional perspective, on the other hand, includes risk-taking, innovativeness, proactiveness, competitive aggressiveness, and autonomy as independent elements of EO proposed by Lumpkin and Dess (1996) (Bolton & Lane, 2012; V. Gupta & Gupta, 2015; Mohammadi, 2021; Ranasinghe et al., 2019).

Entrepreneurial orientation has been recognized as a firm-level construct that can also be applied in the individual domain (Bolton & Lane, 2012; Forcadell & Úbeda, 2022; V. K. Gupta et al., 2016; Kraus et al., 2019; Santos et al., 2020, 2021; Simonsson & Agarwal, 2021). Entrepreneurial orientation (EO) at the individual level is generally referred to as individual entrepreneurial orientation (IEO) (Simonsson & Agarwal, 2021). IEO has been identified as a significant capability for an individual that influences his or her disposition to become an entrepreneur (Mohammadi, 2021). According to Kollmann et al. (2007), and based on Lumpkin and Dess' (1996) work, IEO refers to personal traits rather than company features (Santos et al.,

2021). Individual entrepreneurial orientation (IEO), according to the authors, can be distinguished by five key factors: (1) an individual who struggles for a high degree of autonomy is more likely to act in an entrepreneurial manner; (2) the individual's attitude toward innovation effects the entrepreneurial behavior; (3) risk-taking is likely to have an impact on IEO; (4) the proactive person seizes any business opportunities that may arise; and (5) the individual believes that competitive aggressiveness is similar to the need for achievement and that this also has an impact on IEO (Santos et al., 2021). Gerschewski et al. (2016) conducted a qualitative study where they include two dimensions to the previous measurement scale of IEO. These two dimensions are passion and perseverance (Gerschewski et al., 2016). Furthermore, Santos et al. (2021) developed a new measure for IEO by including these two dimensions in the measure proposed by Bolton & Lane (2012) (Santos et al., 2021).

CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The proposed conceptual framework is an extended version of the original EO framework consisting of the classical three factors (i.e., risk-taking, innovativeness, and proactiveness) with two additional determinants (i.e., entrepreneurial passion, and perseverance). This extended model aims to provide an improved grasp of the entrepreneurs' personality traits toward the achievement of digital transformation strategy goals. The IEO dimensions were treated independently due to their proclivity to have independent effects, otherwise, it might introduce an erroneous equivalence assumption that assumes these dimensions are always equal and co-occur (Ritala et al., 2021). IEO has been revisited and/or extended by prior researchers in various application areas and has been proven to be a sound model to take into account of. In sum, this paper proposes an extended version of the original IEO model to predict the drivers that have an impact on digital transformation strategy. In the remainder of this section, the drivers of the proposed model are described in detail and the study hypotheses are therefore developed (Fig. 1).

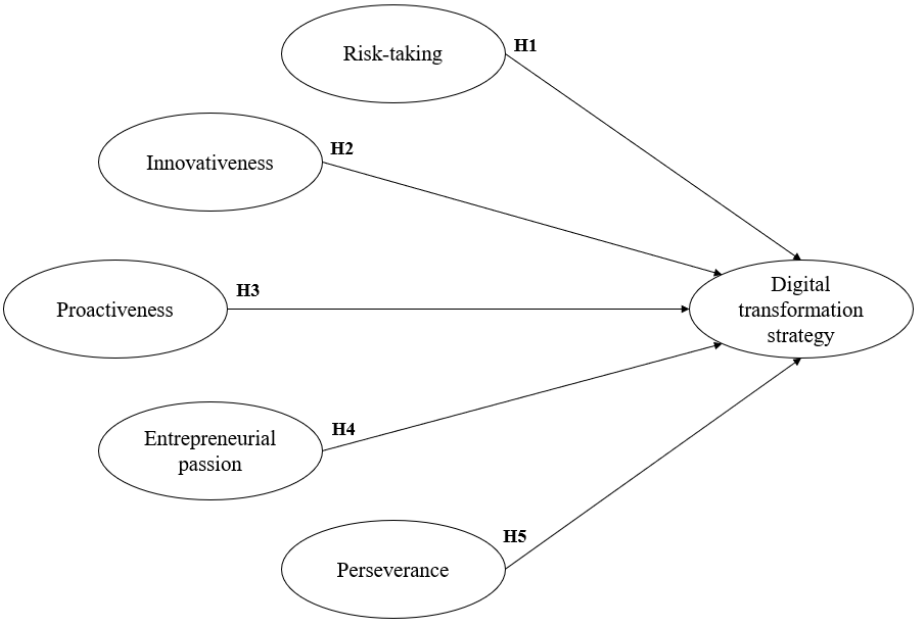

Figure 1. Hypothesized research model.

Risk-taking is the first fundamental component of the EO model, which refers to the process of making decisions and taking actions without sufficient knowledge of the potential consequences (Noer et al., 2013). According to Lumpkin & Dess (1996), risk-taking involves taking bold actions, borrowing heavily, and committing significant resources in uncertain environments (Bolton & Lane, 2012; Campos et al., 2012). Risk-taking as a personality characteristic influences attitudes toward entrepreneurship (Al-Mamary & Alshallaqi, 2022). Many researchers agree that entrepreneurs have a higher risk tolerance than non-entrepreneurs (Noer et al., 2013; Ravasi & Turati, 2005; Wiklund & Shepherd, 2005). In SMEs, the owner's technological ambition is critical for the organization's openness to digital improvements (Trenkle, 2019). Embracing new technologies necessitates an organizational risk-taking culture (Abdallah et al., 2021) that fosters experimentation and influences digital transformation (Mulyana et al., 2021; Weritz et al., 2020). The distinctive feature of digital transformation is that risk-taking is becoming a cultural norm (Akhundova, 2018) that enhances the willingness of enterprise top management to take risks and improve their risk-taking levels (Liu et al., 2023). However, The risk-taking trait of SMEs' top management enables the exchange of novel

ideas and initiatives (Jiang et al., 2019), and helps to achieve long-term business digital transformation strategy goals. Thus, we assume that the higher the entrepreneur's risk-taking level, the greater the chance to achieve the digital transformation strategy goals. Hence, the study proposes the following hypothesis:

Hypothesis 1: The entrepreneurs' risk-taking characteristic has a significant and positive impact on SMEs' digital transformation strategy.

Innovativeness is considered the second fundamental factor of the EO model and can be defined as the "Predisposition to creativity and experimentation through the introduction of new products and services as well as technological leadership via research (R) and development (D) in new processes" (Bolton & Lane, 2012; Lumpkin & Dess, 1996). Personal innovativeness refers to a person's willingness to try out novel ideas, practices (Hirschman, 1980; Jayawardena et al., 2023), or information technologies (Agarwal & Prasad, 1998; Mancha & Shankaranarayanan, 2020). Thus, individuals that excel in personal innovativeness determinants are updated, aware of technological advances, and more adaptable (Farooq et al., 2017). According to Palich & Ray Bagby (1995), entrepreneurs are more innovative than non-entrepreneurs (Baron, 1998; Noer et al., 2013; Stewart et al., 1998; Wiklund & Shepherd, 2005). The ability of SME managers to think creatively and innovatively affects their capability to discover and take advantage of new business opportunities (Jafari-Sadeghi et al., 2023), especially in a dynamic and hostile environment. This is related to personal innovativeness, which is demonstrated by people's intense desire for technology and digital advancements (Abubakre et al., 2020). A digital innovator would use technology to digitally revolutionize the business and fundamentally alter how it functions (Mancha & Shankaranarayanan, 2020). Digital transformation is one of the most significant changes in today's business environment that allows people with an entrepreneurial mindset to enter the market and offer innovative, often web- or data-based solutions, new products, and services (Kooskora, 2021). A digital change procedure links the present state and the desired long-term strategy (Omari, 2019).

Therefore, we suggest that entrepreneurs' innovativeness is crucial to SMEs' success in achieving the goals of the digital transformation strategy. Therefore, the study proposes the following hypothesis:

Hypothesis 2: The entrepreneurs' innovativeness characteristic has a significant and positive impact on SMEs' digital transformation strategy.

Proactiveness is the third basic element of the EO conceptual framework. It is defined as "an opportunity-seeking, forward-looking perspective characterized by new products or services ahead of the competition and acting in anticipation of future demand" (Bolton & Lane, 2012; Campos et al., 2012; Kusa et al., 2022; Lumpkin & Dess, 1996; Niyawanont & Wanarat, 2021). Proactivity is included in most definitions of entrepreneurial orientation, being proactive is one of the most important characteristics of entrepreneurship (Zhao & Smallbone, 2019). According to Baron (1998), entrepreneurs have a higher level of proactiveness than non-entrepreneurs (Noer et al., 2013). Proactive entrepreneurs are action-oriented entrepreneurs who, once they have identified a business opportunity, may overlook the limitations of the resource base over which they have control (Zhao & Smallbone, 2019). Additionally, being proactive influences a new venture's strategic direction encourages businesses to create new products and markets, and supports internal changes and organizational restructuring in order to support business growth (Kickul & Gundry, 2002). Today, SME entrepreneurs need to act fast and be proactive, because SMEs with proactive management are more willing and capable of changing their business model by digitalizing a portion of their business (Ulas, 2019). According to Priyono et al. (2020), SMEs can better cope with environmental changes by transforming their business models with the help of digital technologies. It is worth noting that, even when confronted with limited resources and insufficient capabilities, leaders with high managerial proactiveness aggressively pursued digital transformation rather than throwing in the towel and giving up on their company (Li et al., 2018; Onn et al., 2022; Zangiacomi et al., 2020). Thus, the study assumes that higher levels of proactiveness in entrepreneurs will lead to greater success in

achieving digital transformation goals. Hence, the following hypothesis of the study is proposed:

Hypothesis 3: The entrepreneurs' proactiveness characteristic has a significant and positive impact on SMEs' digital transformation strategy.

Entrepreneurial passion is considered the sixth dimension added by Gerschewski et al. (2016) to the original EO model. Entrepreneurial passion is defined as "consciously accessible, intense positive feelings experienced through participation in entrepreneurial activities linked with roles that are meaningful and salient to the entrepreneur's self-identity" (Cardon et al., 2009, 2013; Lee & Herrmann, 2021). Entrepreneurial passion is a distinct feeling that is common among entrepreneurs (Cardon et al., 2013). Entrepreneurs, according to Bird (1989), are "passionate, full of emotional energy, drive, and spirit". Entrepreneurial passion provides exclusive triggers for entrepreneurs and enables them to acquire the necessary resources to launch a new business (Mohammadi, 2021), create new products or services, and recognize new opportunities for consolidating the firm in the market, as well as to the passion for business growth, which is associated, once again, with the creation of new strategies for firm growth (Santos et al., 2021). According to Cardon et al. (2009), many entrepreneurs are not interested in finding a new company, but in the conscious expansion and development of their businesses. These individuals frequently present organizational management strategies that differ from those of their colleagues (Anjum et al., 2021), such as digital transformation strategy. Therefore, we suppose that entrepreneurs with high levels of entrepreneurial passion level are more likely to achieve the digital transformation strategy goals. Thus, the paper suggests the following hypothesis:

Hypothesis 4: The entrepreneurs' entrepreneurial passion characteristic has a significant and positive impact on SMEs' digital transformation strategy.

Perseverance is the seventh dimension that Gerschewski et al. (2016) added to the original EO model. Perseverance is defined by Markman et al. (2005) as the ability to persist and endure in

the face of adversity. Perseverant people find ways to work around or change constraints through their actions, while less resilient people are easily discouraged by obstacles and unexpected challenges (Bandura, 1997). According to Gerschewski et al. (2016), perseverance is an essential requirement for beginning and carrying out entrepreneurial ventures. Scholars have empirically demonstrated entrepreneurs' above-average willingness or capability to persevere in the face of adversity (Muehlfeld et al., 2017). Perseverance helps entrepreneurs maintain a high staying power and overcome stumbling blocks and setbacks in their firms (Markman et al., 2005; McGrath, 1999). It is also considered as a reinforcement of the entrepreneur's venture idea through the maintenance and expansion of their previous choices of technologies, offerings, customers, and partners (Berends et al., 2021). Thus, perseverance is required for the success of any entrepreneurial activity (Lamine et al., 2014). Therefore, perseverance can refer to both current and future actions, demonstrating the desire to develop strategies based on persistence and resilience for completing and achieving tasks inherent in the goals set (Santos et al., 2021). In this regard, the persevering entrepreneur can evaluate various strategies, such as digital transformation strategy, in order to persevere through difficulties and setbacks and strive for its success. Therefore, we suggest that the higher the entrepreneur's level of perseverance, the greater the chance of achieving the goals of their digital transformation strategy. Thus, the paper proposes the following hypothesis:

Hypothesis 5: The entrepreneurs' entrepreneurial perseverance characteristic has a significant and positive impact on SMEs' digital transformation strategy.

RESEARCH METHODOLOGY

1. Research Instrument

This study aimed to substantiate the proposed conceptual model and hypotheses through a quantitative survey approach. We developed a comprehensive questionnaire divided into three key sections: (1) demographic characteristics, (2) IEO factors, and (3) digital transformation

strategy. The six constructs selected for investigation were operationalized based on prior theories and empirical evidence, resulting in the development of 22 adaptive questions (items) in the form of statements, as displayed in Table 1. Moreover, a 5-point Likert scale was used for responses, spanning from "strongly disagree" to "strongly agree" (1 to 5, respectively). Notably, the questionnaire was translated into French to account for the contextual reality of Moroccan entrepreneurs.

Table 1. List of constructs and their items

Constructs	Items	References
Risk-taking (RT)	1. I like to take bold action by venturing into the unknown 2. I prefer to live a challenging life rather than a comfortable one, even though I know I may face many difficulties along the way 3. I am willing to invest much time and/or money in something that might yield a high return and wide-ranging actions to achieve my objectives 4. I have a strong preference for high-risk projects (with chances of very high returns)	Bolton and Lane (2012); Ritala et al. (2021); Sisilia and Sbiq (2018); Simonsson and Agarwal (2021); Keh et al. (2017)
Innovativeness (INN)	1. In general, I prefer a strong emphasis in projects on unique approaches rather than revisiting tried and true approaches used before 2. I prefer to try my own unique way when learning new things rather than doing it as everyone else does 3. I favor experimentation and original approaches to problem-solving rather than using methods others generally use for solving their problems	Bolton and Lane (2012); Ritala et al. (2021); Sisilia and Sbiq (2018); Simonsson and Agarwal (2021)
Proactiveness (PRO)	1. I usually act in anticipation of future problems, needs, or changes and initiate actions to which others respond 2. I excel at identifying opportunities and tend to plan ahead on projects. 3. I prefer to "step up" and get things going on projects rather than sit and wait for someone else to do it	Bolton and Lane (2012); Ritala et al. (2021)
Entrepreneurial passion (EP)	1. I have a passion for finding good business opportunities, developing new products or services, exploiting business applications, and creating new solutions for existing problems and needs. 2. I have a passion for envisioning, growing, and expanding my business. 3. I am passionate about what I do, and, when I am away from my business, I cannot wait to return.	Santos et al. (2020) ; Santos et al. (2021)
Perseverance (PER)	1. I have overcome setbacks to meet major challenges 2. I always finish what I start 3. In many complex situations, I persist in achieving my goals despite seeing others give up	Santos et al. (2020) ; Santos et al. (2021)

Digital transformation strategy (DTS)	1. Our company's digital transformation strategy can improve competitiveness 2. Our company's digital transformation strategy can fundamentally change business processes 3. Our company's digital transformation strategy can improve customer experience and satisfaction 4. Our company's digital transformation strategy can improve innovation capabilities 5. Our company's digital transformation strategy can improve business decisions 6. Our company's digital transformation strategy can improve efficiency	Teng et al. (2022)

2. Data Collection and Sample Characteristics

In order to collect data for the validation of the proposed conceptual model, an online survey was distributed for a one-month period, from March 15 to April 15, 2023. Convenience sampling was employed due to the unavailability of information regarding the population size. However, before its dissemination, the questionnaire was subjected to a pre-testing phase to ensure the soundness and consistency of its items—a fact corroborated by the subsequent pilot test report.

The study's dataset was comprised of responses from 74 entrepreneurs across Moroccan SMEs. Demographically, the respondents comprised a predominantly of male group, accounting for 72% of the sample, while female participants constituted 28%. A significant portion of the respondents (60%) fell into the 18-40 age group, with 35% between 41 and 60 years, and a small fraction (5%) aged over 60, pointing to a significant representation of young males. This indicates a significant proportion of male youth in the sample. Regarding educational attainment, 45% held a master's degree, 20% a bachelor's, and 15% a Ph.D., whereas the rest had either continued their education two years post-baccalaureate (11%) or ceased after obtaining their baccalaureate (8%). The participants were scattered across diverse sectors—services (41%), industry and commerce (39%), tourism (9%), construction (7%), and agriculture (4%). Regarding the experience of the entrepreneurs, half of them (50%) have less than five years of experience, 27% have between five and ten years, and the remaining 23%

boasted over ten years of experience. Finally, the entrepreneurs were dispersed across various regions in Morocco, with the highest participation rate being from Souss-Massa (39%), followed by Casablanca-Settat (34% each), Rabat - Salé - Kénitra (8%), Marrakech – Safi (7%), and other regions with lower participation rates.

Table 1. Descriptive statistics of the sample.

Category	Percentage	Sample Characteristics
Demographic distribution	72%	Male
	28%	Female
Age	60%	Between 18- 40 years
	35%	Between 41–60 years
	5%	Above 60 years
Education	45%	Master's degree
	20%	Bachelor's degree
	15%	Ph.D. degree
	11%	Two years after the baccalaureate
	9%	Baccalaureate
Sector	41%	Services
	39%	Industry and commerce
	9%	Tourism
	7%	Construction
	4%	Agriculture
Experience	50%	Below 5 years
	27%	Between 5 and 10 years
	23%	Above 10 years
Moroccan regions	39%	Souss-Massa
	34%	Casablanca-Settat
	8%	Rabat-Salé-Kénitra
	7%	Marrakech – Safi
	12%	Other Moroccan regions

3. *Data Analysis Technique*

The current study adopted Structural Equation Modelling (SEM) to examine the proposed conceptual model, employing the Smart-PLS3 software due to its exceptional analytical prowess in exploratory studies (Aktar & Pangil, 2017). Notably, SEM does not impose any limitations on sample size (Chatterjee et al., 2021), making it an optimal approach for this investigation. The first step was the assessment of the measurement model, ensuring both its convergent and discriminant validity. The subsequent step consisted of evaluating the structural model in order to affirm or refute the study's hypotheses. Through this methodology, the study's findings are more likely to be accurate and dependable, enhancing its credibility and applicability. Thus, SEM stands out as an exemplary analytical instrument for examining the complexity of relationships among variables in a multidimensional construct.

DATA ANALYSIS AND RESEARCH FINDINGS

Structural Equation Modelling (SEM) is a robust multivariate technique that is increasingly being embraced in academic research. Within SEM, the model can be perceived in two unique ways, namely: the measurement model and the structural model. The measurement model focuses on the relationship between a latent variable and its corresponding indicators. In contrast, the structural model delineates the interconnectedness among diverse constructs in a specified model.

1. *Measurement model*

The measurement model's convergent validity, reliability, and discriminant validity were evaluated utilizing confirmatory factor analysis (CFA) (Schreiber et al., 2006). Average variance extracted (AVE) was used to determine the convergent validity, while composite reliability (CR) and Cronbach's alpha (α) were employed for reliability assessment. Further, the Fornell and Larcker criterion (1981) was used to evaluate discriminant validity. The corresponding values can be found in Tables 3 and 4.

Researchers advocate that factor loading rates greater than 0.7 usually signify sufficient individual item reliability. In the context of this study, DTS2, EP3, PER1, and RT1 were excluded due to their item values falling under 0.7. Table 3 demonstrates how AVE was employed to evaluate convergent validity. Ideally, AVE values should surpass the 0.5 thresholds (Hair et al., 2010). All constructs in our study outperformed this cutoff point, with scores ranging from 0.639 to 0.798, indicating good convergent validity.

The validity of the measurements is further detailed in Table 3. The Composite Reliability (CR) values for each construct surpassed the recommended threshold of 0.7, ranging between 0.841 and 0.938, as did the Cronbach's alpha (α) values, with a range of 0.7 to 0.917. Given these results, the reliability of the constructs used in our research appears to be adequate (Hair et al., 2010). Consequently, the items are reliable, and the constructs are consistent and valid.

Table 3. Measurement properties.

	Items	Loading	Cronbach's alpha	CR	AVE	Note
Digital Transformation Strategy (DTS)	**DTS1**	0.832	0.917	0.938	0.752	DTS2 was excluded
	DTS3	0.918				
	DTS4	0.922				
	DTS5	0.825				
	DTS6	0.834				
Entrepreneurial Passion (EP)	**EP1**	0.863	0.751	0.887	0.798	EP3 was excluded
	EP2	0.922				
Innovativeness (INN)	**INN1**	0.832	0.801	0.881	0.712	
	INN2	0.834				
	INN3	0.866				
Perseverance (PER)	**PER2**	0.844	0.695 (close to 0.7)	0.866	0.765	PER1 was excluded
	PER3	0.903				
Proactiveness (PRO)	**PRO1**	0.785	0.818	0.890	0.729	
	PRO2	0.858				
	PRO3	0.914				
Risk Taking (RT)	**RT2**	0.731	0.722	0.841	0.639	RT1 was excluded
	RT3	0.837				
	RT4	0.826				

Note: CR =composite reliability; AVE =average variance extracted

For adequate discriminant validity, it is recommended that the square root of the AVE for each latent variable exceed its correlation coefficients with other variables (Fornell & Larcker, 1981). As shown in Table 4, the diagonal values are greater than the inter-factor correlations, hence demonstrating that the criteria for discriminant validity were also satisfied. Consequently, it was concluded that the construct validity and reliability of the measurement tools were sufficient for this study.

Table 4. Discriminant validity test.

	AVE	DTS	EP	INN	PER	PRO	RT
DTS	**0.752**	**0.867**					
EP	**0.798**	0.575	**0.893**				
INN	**0.712**	0.261	0.551	**0.844**			
PER	**0.765**	0.406	0.337	0.086	**0.874**		
PRO	**0.729**	0.353	0.681	0.555	0.317	**0.854**	
RT	**0.639**	0.379	0.305	0.517	0.223	0.327	**0.499**

Note: DTS=Digital Transformation Strategy; EP= Entrepreneurial Passion; INN=Innovativeness; PER=Perseverance; PRO=Proactiveness; RT=Risk Taking

2. Structural model analysis

Table 5 and Figure 2 show the findings related to the explanatory power (R2) of the research model, the path coefficient estimates, and their significance in analysing causal relationships. The R2 for endogenous constructs is used to assess the nomological validity (explanatory power) of the assessed model. The R2 value for DTS, as indicated in Figure 2, stands at 0.441. It is generally recommended that R2 values should be greater than 0.10 to confirm the adequacy of a latent construct (Falk & Miller, 1992).

In order to test the hypotheses, the bootstrapping method was applied in PLS-SEM analysis, using the Smart PLS software. In this procedure, 500 resamples were considered. The results, as displayed in Table 5, reveal that two out of five hypotheses were accepted, while three were refuted. The analysis indicates a significant influence of Risk Taking (RT) and Entrepreneurial Passion (EP) on Digital Transformation Strategy (DTS). Among the impacts of RT (β= 0.276,

p< 0.01) and EP (β= 0.589, p< 0.001) on DTS, EP's effect on DTS was more substantial Thus, hypotheses H1 and H4 were accepted. Conversely, hypotheses H2, H3, and H5 were rejected as Innovativeness (INN) (β= -0.163, p> 0.05), Proactiveness (PRO) (β= -0.109, p> 0.05), and Perseverance (PER) (β= 0.194, p> 0.05) exhibited an insignificant effect on DTS.

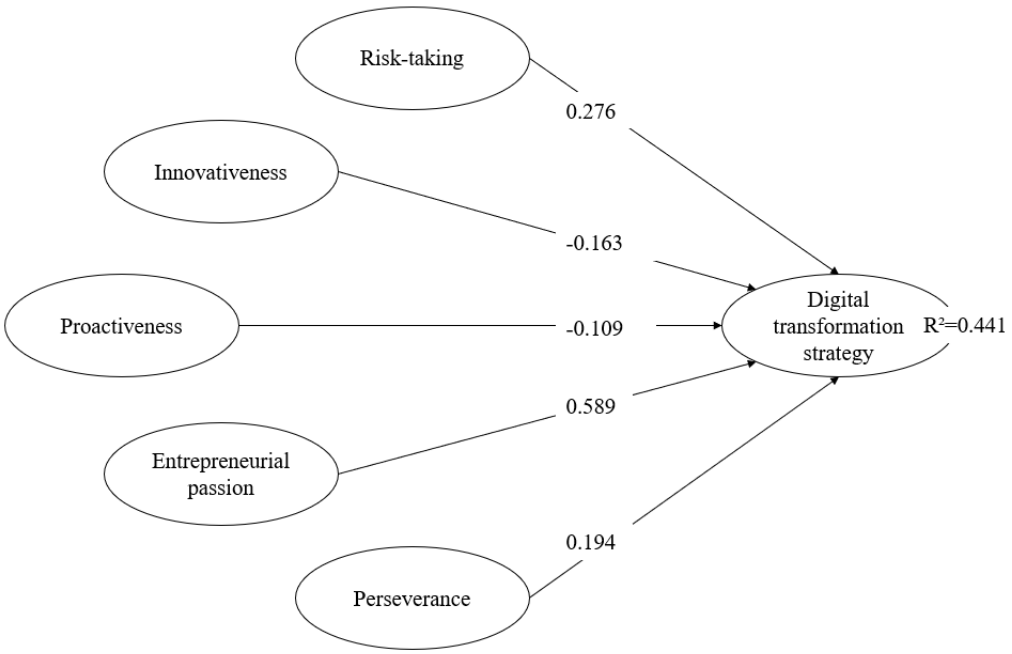

Figure 2. Assessment of the structural model.

Table 5. Structural model results.

HYPOTHESIS	RELATIONSHIP	BETA (PATH COEFFICIENTS)	T-STUDENT (BOOTSTRAP)	P-VALUE	ACCEPTED/ REJECTED
Hypothesis 1 (H1)	RT => DTS	0.276	2.624	***	Accepted
Hypothesis 2 (H2)	INN => DTS	-0.163	1.071	p >0.05 (ns)	Rejected
Hypothesis 3 (H3)	PRO => DTS	-0.109	0.852	p >0.05 (ns)	Rejected
Hypothesis 4 (H4)	EP => DTS	0.589	3.361	**	Accepted
Hypothesis 5 (H5)	PER => DTS	0.194	1.485	p >0.05 (ns)	Rejected

Note: *p <.05; **p <.01; ***p <0.001

DISCUSSION

The empirical study proposes an extended version of the original IEO framework that takes into account risk-taking, innovativeness, and proactiveness as additional criteria in addition to entrepreneurial passion and perseverance. The study specifically examines how these five elements affect the achievement of digital transformation strategy goals in SMEs.

The study's findings offer insightful and relevant knowledge regarding the entrepreneur's IEO. To be more precise, the structural model highlights the statistical significance of risk-taking and entrepreneurial passion for achieving digital transformation strategy goals. This finding demonstrates taking the risk and being passion will help the entrepreneur to undertake brave decisions, develop adaptative strategies, and invest time and money in new digital technologies to succeed the enterprise's digital transformation in general.

Regarding the three additional components, it has been determined that neither innovativeness, proactiveness nor perseverance have statistically significant effect on achieving SME's digital transformation strategy goals, which is interestingly in contrast to what was expected. Because the common conclusion is that most previous studies have consistently shown strong relationships between these constructs, particularly in relation to enterprise performance and goal achievement.

CONCLUSION

To the best of our knowledge, digital transformation strategy research using the IEO framework has never been examined, and this is the first study to have explored this topic. In particular, this study proposes an extended version of the basic IEO framework that incorporates two additional aspects, namely entrepreneurial passion, and perseverance, in addition to the traditional ones, namely risk-taking, innovativeness, and proactiveness. Thus, it has been analyzed and proven the significance of these five constructs unstudied in the context of digital transformation. Notably, the results reveal that risk-taking and passion have strong positive

effects on the accomplishment of digital transformation goals, whereas innovativeness, proactiveness, and perseverance do not. Consequently, these findings may afford a unique outlook on elaborating a digital transformation strategy for better results.

Despite offering valuable insights, this study is not without limitations, some of which could pave the way for further research. Firstly, as noted in the research methods section, the study resorted to convenience sampling. Owing to the limited size of the sample, the results cannot be applicable to all Moroccan entrepreneurs. Secondly, a cross-cultural examination of the proposed conceptual framework could potentially yield more significant information. Finally, enriching the proposed conceptual model with additional determinants could provide a more comprehensive research framework, fostering a more holistic exploration of the topic.

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