Journal of Business Research xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Journal of Business Research

journal homepage: www.elsevier.com/locate/jbusres

Developing a scale for entrepreneurial marketing: Revealing its inner frame and prediction of performance

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ARTICLE INFO

Keywords:
Entrepreneurial marketing
Scale development
Entrepreneurial orientation
Customer orientation
Resource leveraging
Market-driving

ABSTRACT

Entrepreneurial marketing (EM) is considered a marketing concept for firms that strive to run entrepreneurial, market-driving and at the same time customer-focused marketing programs that work particularly well under resource constraints. However, even after more than three decades after its inception, researchers still focus on validating single dimensions of the EM concept (the outer frame), but do not ask what these dimensions may have in common (the inner frame). Using a sample of 1156 firms, this paper develops such a valid scale and analyzes its effect on firm performance. Results show that EM consists of three correlating dimensions: 1) change-driving, 2) bootstrapping, and 3) risk-taking that have a positive effect on firm performance.

1. Introduction

In the last 30 years, more and more research has focused on the marketing/entrepreneurship interface, particularly studying the entrepreneurial marketing (EM) concept (Hills, Hultman, & Miles, 2008; Kraus, Filser, Eggers, Hills, & Hultman, 2012). A lot of research has focused on describing and defining EM (see e.g., Bjerke & Hultman, 2002; Hills et al., 2008; Kraus, Harms, & Fink, 2010), which includes distinguishing it from other marketing approaches such as innovation marketing or the classic approach. The latter segments markets first before target segments are chosen and a specific marketing program (the "4Ps") is executed (Kotler, 1967). The classic approach was developed on the basis of and for large, resource-intensive firms and is still largely practiced and taught today. Whereas in the early stages EM was considered a marketing approach for small and new firms (see e.g. Carson, Cromie, McGowan, & Hill, 1995; Hills, 1987), the discipline developed into an entrepreneurial version of marketing suited for all kinds of firms (Kraus et al., 2010). EM is considered an entrepreneurial, customer-oriented, market-driving marketing approach that works particularly well under resource constraints. This goes along with Morris, Schindehutte, and Laforge's (2002) EM conceptualization that describes EM as opportunity-driven, proactive, innovation-focused, customer intense, risk-taking, resource leveraging and value creating.

To comprehend the different influencing factors and to find a suitable concept description, this article will adapt the definition of Kraus et al. (2010), who combined the marketing definition of the American Marketing Association (Keefe, 2004) and the characteristics of entrepreneurship, in particular entrepreneurial orientation (EO). EO is a firm-level strategic orientation which captures an organization's strategy-making practices, managerial philosophies, and firm behaviors that are entrepreneurial in nature. EO is typically captured by the dimensions of innovativeness, proactiveness, and risk-taking (Anderson, Covin, & Slevin, 2009). Therefore, in this article, EM is regarded as "… an organizational function and a set of processes for creating, communicating and delivering value to customers and for managing customer relationships in ways that benefit the organization and its stakeholders, and that is characterized by innovativeness, risk-taking, proactiveness, and may be performed without resources currently controlled" (Kraus et al., 2010, p. 26).

Whereas it has always been assumed that EM is a valuable approach for resource-constrained firms and that using EM has positive performance effects, empirical support is still largely missing. The need for measuring performance outcomes of EM was already called upon by Morris et al. (2002), and more recently by Miles, Gilmore, Harrigan, Lewis, and Sethna (2015), who ask if the premises of EM can be empirically tested and replicated to test for generalizability.

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https://doi.org/10.1016/j.jbusres.2018.11.051
Received 27 October 2017; Received in revised form 24 November 2018; Accepted 26 November 2018

So far, most research has focused on measuring performance effects of strategic orientations such as entrepreneurial, innovation, market, and customer-orientation (CO), either separately or in different configurations (see e.G. *Miles & Arnold,* 1991; Eggers, Kraus, Hughes, Laraway, & Snycerski, 2013). Whereas these strategic orientations are necessary conditions for EM, they alone cannot be equated with EM. EM can be better understood as the common factor behind these conditions, or put simply, an "inner frame" that is shared by all these strategic orientations. Consequently, EM is a tool that follows from different strategic orientations (see also Morrish, Miles, & Deacon, 2010). From a methodological perspective, EM is a higher order construct that requires to capture the content of its components and thus is inherently formative. Covin and Wales (2012) used a similar approach regarding EO. However, in contrast to EO, EM's inner frame could have more than one dimension due to its multi-faceted nature (Jones & Rowley, 2011), similar to the five-factor model in personality psychology (McCrae & Costa, 1987) that reduces dozens of personality traits to five basic dimensions.

Thus, developing and validating a tool to assess the performance impact of EM is a complex task. Along these lines, Jones and Rowley (2009, 2011) proposed an entrepreneurial marketing orientation (EMO) framework, a combination of entrepreneurial, customer, market, and innovation orientations. In a qualitative study, Jones, Suoranta, and Rowley (2013) assessed the effect of EMO on firm growth.

Although different authors have worked on the performance topic (see also Jones, Sethna, & Solé, 2013; Paliwoda, Slater, Kocak, & Abimbola, 2009), there is still little academic literature that quantitatively investigates the effect of EM on firm performance (Mort, Weerawardena, & Liesch, 2012). This is particularly the case since useable EM scales are still missing, which are needed to measure performance effects. So far, only Kocak (2005), Schmid (2012) and Fiore, Niehm, Hurst, Son, and Sadachar (2013) engaged in developing quantitative EM scales. All three scales show EM as a formatively measured, multidimensional construct, but showed severe limitations (see Table 1 for an overview). Most importantly and apart from the fact that so far only Fiore et al. (2013) published their work in a peer-reviewed journal, only Schmid (2012) investigated (in her Ph.D. dissertation) an inner frame that seeks to find an inner structure of EM which goes beyond its defining, individual dimensions. However, since this was done with explorative factor analyses only and without comparing multiple solutions (e.g., one, two, three dimensions), validity is at stake. Overall, and to overcome these limitations, it seems valuable to identify the inner frame of EM with a larger, neither industry nor size restricted sample and improved methodological rigor.

Therefore, on the basis of EM literature, it is the objective of this article to develop a statistically sound EM scale and to further investigate the nature of the EM construct, in particular its dimensionality. Whether this inner frame of EM is uni- or multi-dimensional will be investigated empirically. We will also analyze if and under which circumstances EM leads to increased firm performance, in order to show that EM is a real phenomenon that can also be practically implemented in firms.

2. Theory

In their seminal article, which has been cited over 500 times already, Morris et al. (2002) identified seven key dimensions for EM: proactive orientation, opportunity-driven, customer-intensity, innovation-focus, risk management, resource leveraging, and value creation. Three of these seven dimensions – proactive orientation, innovation-focus, and risk management – originally stem from the EO construct (there being called: innovativeness, proactiveness, and risk-taking). Whereas pure EO research often treats them as unidimensional (e.g. Semrau, Ambos, & Kraus, 2016), in this manuscript they are considered individual dimensions within their conceptualization of EM. In the following, customer-intensity (or customer orientation – CO) and

Table 1
Comparison of EM measurement approaches.

	Kocak, 2005	Schmid, 2012	Fiore et al., 2013	This study
Sample	674 regional small firms, Ankara, Turkey	262 nationwide small and medium-sized firms, Austria	266 regional small firms, Midwest USA (pilot study); 429 nationwide small firms, USA (main study)	1156 firms ranging from small to large, Austria
Industry	No limitation	Manufacturing sector	Retail and service firms	No limitation
Theoretical dimensions applied (termed)	5 - Proactiveness, innovativeness, opportunity focus, customer-orientation, value creation	7 - Innovativeness, calculated risk-taking, proactiveness, proactive market orientation (value creation), responsive market orientation (customer intensity), market-driving, resource leveraging	6 - Proactive orientation, opportunity-driven, consumer intensity, innovation focused, value creation, risk management	6 - Risk-taking, proactiveness, innovativeness, resource leveraging, market-driving, customer-orientation
Empirical dimensions confirmed	5 - Same as applied	4 - Market-oriented initiation of changes in market players' behaviors, customer-orientation, use of relationships to stretch resources, acceptance of calculated risk	6 - Same as applied	3 - Change-driving, bootstrapping, risk-taking
Items	Initially: 40, finally: 13	Initially: 34, finally: 29	Initially: 18, finally: 16	Initially: 33, finally: 23
Methods applied	EFA, CFA for reliability	EFA, CFA for reliability	EFA, CFA for reliability, convergent and discriminant validity; SEM for nomological validity related to entrepreneurial intentions, 5Ps, 4Es and brand distinctiveness	EFA, CFA for reliability, convergent and discriminant validity; SEM for nomological validity related to firm performance with comparison of EM model approaches
Remarks	High number of deleted items (e.g., 3 out of 5 innovativeness items); relatively low reliability due to low number of items (e.g., 0.70 for innovativeness)	Only 72.1% of sample consist of top-management; empirical factors based on EFA (principal component analysis) only	Substantial drop-off of item loadings for main study compared to pilot study; misconception in estimation of discriminant validity (not the AVE should be squared, but the correlations, c.f. Fornell & Larcker, 1981, p. 46)	See limitations

resource leveraging (RL) will each be treated as a distinct dimension of the EM construct. Opportunity-driven and value creation will be combined into the concept of market-driving (MD).

2.1. Entrepreneurial orientation

In 1983, Miller introduced EO as an unidimensional construct consisting of the three sub-dimensions of innovativeness, proactiveness, and risk-taking. Lumpkin and Dess (1996) added two dimensions (competitive aggressiveness and autonomy) to EO and interpreted the now five-dimensional construct as multidimensional. Although the latter received significant attention, it is safe to say that the three-dimensional approach has prevailed as the standard in EO research (Wales, Gupta, & Mousa, 2013). It interprets EO as a collective strategic construct in which the simultaneous manifestation of innovativeness, risk-taking, and proactiveness typifies an entrepreneurial approach. Most studies take the position that it is the shared variance among the three dimensions that defines EO as an overall strategic posture (Covin, Green, & Slevin, 2006; Rauch, Wiklund, Lumpkin, & Frese, 2009).

Schumpeter (1934) was one of the first to point out the importance of *innovativeness* in the entrepreneurial process, with "creative destruction" as its extreme outcome, which occurs when the introduction of new products or services disrupts the current market and causes a shift of resources. Innovativeness reflects a firm's willingness to support new ideas, creativity, and experimentation in the development of internal solutions or external offerings (Bouncken, Pesch, & Kraus, 2015; Covin, Eggers, Kraus, Cheng, & Chang, 2016).

Proactiveness means acting in anticipation of future problems, needs, and changes. Proactiveness refers to efforts to take initiative, anticipate and enact new opportunities, and create or participate in emerging markets (Entrialgo, Fernández, & Vázquez, 2000). Proactiveness includes the tendency to be the first to market with new products or services. A proactive firm is often the initiator of actions or events that the competition must then react to, leading the way in products and services (Lumpkin & Dess, 1996).

Risk-taking is typically used to describe the uncertainty that results from entrepreneurial behavior (Lumpkin & Dess, 1996; Low & MacMillan, 1988). As opposed to an employee, the entrepreneur takes higher risks which might eventually lead to higher rewards (Brockhaus, 1980). Entrepreneurial behavior involves investing a significant proportion of resources into a project with a high probability of failure. So an important trait that entrepreneurs must embody is a strong ability to determine the right path for their businesses in the face of uncertainty (Ricketts, 2006).

A meta-analysis by Rauch et al. (2009) confirmed the positive performance effect of EO. Also, research has shown that EO's dimensions individually lead to increased firm performance (see e.g. Shepherd & Shanley, 1998; Miller, 1983; Craig, Pohjola, Kraus, & Jensen, 2014). The latter is an important finding, given that this study's aim is to investigate each dimension's individual effect on EM's inner frame.

2.2. Customer orientation

CO represents the responsive, traditional marketing approach where "the customer is king." According to Slater and Narver (1998) and Narver, Slater, and MacLachlan (2004), CO is reactive in nature. The focus is on identifying customers' expressed needs to develop products and services (Deshpande, Farley, & Webster, 1993). Customer-intense businesses focus on understanding the expressed desires of their customers in their served markets and on developing products and services that satisfy those desires (Slater & Narver, 1998). In this regard, Narver et al. (2004) distinguish between responsive and proactive market orientation. Whereas responsive market orientation resembles CO as discussed above, proactive market orientation tries to uncover latent, unarticulated customer needs. In this article, we focus on responsive market orientation – or CO – in order to avoid overlap with proactiveness as discussed in conjunction with EO.

The effect of CO on firm performance led to some controversy in the past. Whereas some empirical studies find that CO alone correlates negatively with firm performance (Christensen, 1997; Christensen & Bower, 1996; Eggers et al., 2013; Naidoo, 2010), discover others the opposite effect (Deshpande et al., 1993; Saxe & Weitz, 1982). However, we believe that in terms of grasping the concept of EM, CO is a needed dimension to ground the proactive, innovative and risky moves of a firm (Morrish et al., 2010). In fact, research shows that successful innovation is about constantly testing innovative ideas on and with potential customers (Blank & Dorf, 2012; Eggers & McCabe, 2016). Further, leveraging resources, as discussed below, requires firms being close to their market partners (Ostendorf, Mouzas, & Chakrabarti, 2014).

2.3. Resource leveraging

Young and small firms typically have to deal with a limited set of assets (Becherer, Haynes, & Helms, 2008), such as financial, physical, legal, human, organizational, informational, and relational resources (Hunt & Madhavaram, 2006; Ostendorf et al., 2014). Larger firms are oftentimes associated with having a larger resource pool. Still, their shareholders tend to demand resource frugality, in particular when it comes to financial resources. Thus, for firms of all sizes, leveraging their resources is key, particularly when it comes to running cost-conscious marketing campaigns (Collinson & Shaw, 2001; Fillis & Herman, 2005).

RL, defined as getting the most out of a limited set of resources, includes stretching resources currently controlled by the firms and using additional resources currently not controlled (Morris et al., 2002). Regarding the latter, entrepreneurial firms try to leverage resources by initiating and maintaining network relationships with their stakeholders (Håkansson & Ford, 2002). Research has shown that obtaining resources from market partners, such as other firms and customers (Jones & Rowley, 2011), can foster a firm's marketing efforts (Gilmore, Carson, & Grant, 2001) and innovation output (Ostendorf et al., 2014). In terms of RL, this integration of partners into marketing and production processes leads to above average market performance with a below average resource investment (Ramaswami, Srivastava, & Bhargava, 2009).

In summary, it can be expected that RL – including an intensified communication with market partners – helps to improve the competitive position of a firm. In this regard, Lehman, Ronald Fillis, and Miles (2014) show the positive effect of RL on firm performance.

2.4. Market-driving

The two remaining concepts of Morris et al.'s (2002) EM conceptualization are value creation and opportunity-driving. Both will be captured in the construct of MD, which displays a firm's willingness to change market players' behaviors and market structures (Jaworski, Kohli, & Sahay, 2000). Changing a market's status quo typically starts with the recognition of market opportunities. However, according to Schmid (2012) and Eggers, Kraus, and Filser (2009), the pure recognition of opportunities is not sufficient in order to innovate and create customer value. Rather, a firm must be willing to *act* upon these opportunities and be able to create marketing programs, which in fact have the potential to change, i.e. to *drive* markets. In consequence, MD is intended to positively influence firm performance (Schindehutte, Morris, & Kocak, 2008).

Acting upon market opportunities shares commonalities with the proactiveness dimension of EO. This overlap is tolerable, occurs whenever MD and EO are used in the same research study (Hills, 2004), and also exists within the conceptualization of Morris et al. (2002). At the same time, as mentioned above, MD shows a strong overlap with value creation (Hills, 2004), which in turn differentiates the construct from sheer proactiveness. Overall, the creation of revolutionary

marketing strategies based on entrepreneurial mindsets are key factors of both MD and EM (Kumar, Scheer, & Kotler, 2000).

To summarize, the four upper-level dimensions discussed above cover both an aggressive, forward-looking perspective (EO and MD) as well as a more passive, resource-conscious view (CO and RL). Previous research has discovered that it is the interplay of aggressive and conservative actions that lead to firm growth, which is considered a major outcome of entrepreneurial behavior (Eggers & Kraus, 2011; Garnsey, 1998). Subsequently, available scales for EO (with innovativeness [IN], proactiveness [PA] and risk-taking [RT]), CO, RL and MD will be combined to see if they reveal EM's inner frame and how this EM construct relates to firm performance.

3. Methodology

3.1. Scales

Proactiveness, innovativeness and (calculated) risk-taking are measured through an EO scale as developed by Eggers et al. (2013). Proactiveness and innovativeness are covered by 5 items, whereas risk-taking is captured by 4 items. The scale is based on Covin and Slevin (1989) and Miller (1983), but, in addition, pays attention to the special characteristics of SMEs. CO is assessed through the responsive MO scale by Narver et al. (2004) and consists of 7 items. RL is measured through an 8-item scale as developed by Schmid (2012), which is based on Morris et al.'s (2002) conceptualization. MD is assessed through a 4-item measure as developed by Stolper (2007), later slightly adapted by Schmid (2012). The MD scale is based on work by Jaworski et al. (2000) and measures a firm's willingness to change market structures and market participants' behaviors. Firm performance is measured through 4 items: 5-year growth in revenues, profits, employees, and market share, all in relation to the competition (see e.g. Chen, Tzeng, Ou, & Chang, 2007).

3.2. Data collection

Data for this research project was gathered through an online questionnaire. In early 2016, a random sample of key decision makers from 20,000 Austrian firms of various industries and sizes were contacted. However, firms without any employees were excluded from the sample. Company information was collected from the Herold Business Database.

Because most of the scales listed above are written in English, they had to be translated as the key informants were German speaking upper and top-management executives. To ensure high quality and to maintain reliability and validity, the items were translated through a double-blind method (Brislin, 1980). The survey was pretested among experts in the field and improved according to their feedback.

The survey was distributed without reminder mails given very strict data privacy regulations. In order to improve the response rate, the authors promised an executive summary with managerial implications to all participants and provided a phone number and email address in case participants had questions about the survey. In the end, 1263 completed questionnaires were received, which leads to a response rate of 6.32%. This response rate is considered typical for online survey research (see e.g. Eggers et al., 2013; Fryrear, 2015). Thereafter, the dataset was checked for biased answers and for firms with a headquarter location outside of Austria. After deleting these responses, 1156 complete surveys remained (for descriptive statistics, see Tables 2 and 3).

Whereas the oldest firms in the sample were founded > 100 years ago, the youngest firms are less than one year old. The average age of all sample firms is 30.69 years. In terms of size, 87.8% of the firms had < 100 employees (Table 2). To demonstrate representativeness regarding the local population, industry affiliations of sample firms were compared with Austrian market data. As can be seen in Table 3, our sample matches overall Austrian market characteristics quite well with very similar percentages for service and wholesale firms. In other categories, the sample firms are slightly over- or underrepresented. The biggest gap exists for the manufacturing industry.

Table 2
Sample description by position of key informants and firm size.

	Total amount	Percentage
Position		
Chief executive position (CEO, director)	1067	92.3%
Executive position (manager, group leader)	66	5.7%
Employee position	23	2.0%
	1156	100%
Firm size		
< 30 employees	844	73.0%
30 to 100 employees	171	14.8%
101 to 500 employees	94	8.1%
> 500 employees	47	4.1%
	1156	100%

Table 3
Comparison of sample characteristics with Austrian data.

Criterion	Sample	Austria
Services overall*	69.98%	67.10%
Manufacturing	5.46%	12.28%
Construction	7.17%	11.15%
Wholesale, retail trade	17.52%	17.30%
Transportation	3.11%	2.68%
Food service industry	9.73%	5.96%
Information and communication	4.68%	8.30%
Financial and insurance services	2.32%	3.98%
Professional, scientific and technical services	16.59%	12.20%
Education	2.16%	1.38%
Other	31.26%	24.07%

* According to Eggers et al. (2013); all other according to Statistics Austria (2015).

3.3. Analysis tools

A multi-dimensional EM variable requires a corresponding multi-layered analysis. For that reason, we elaborate on the paradigm of Gerbing and Anderson (1988) for unidimensional latent variables and integrate two levels of investigation. In other words, we first look at the measurement properties of the individual scales referring to IN (EO), PA (EO), RT (EO), CO, RL and MD. Having confirmed dimensionality, reliability, and validity, a second level applies composites of those six dimensions (z-standardized scores of one-factor solutions by exploratory factor analyses, EFA) to approximate the second-order latent variable of EM and check for dimensionality, reliability, and validity again. Overall, ten steps are applied to achieve this goal (Table 4). Thereby, multiple related techniques are used, namely exploratory factor analyses (EFA) with oblique rotations (Comrey & Ahumada, 1964), reliability checks based on Alpha (assumption of uni-dimensionality, Cronbach, 1951) and Omega (assumption of multi-dimensionality, Revelle & Zinbarg, 2009), covariance-based confirmatory factor analysis (CFA, Jöreskog & Sörbom, 1982) and the HTMT criterion which is superior to traditional criteria (Henseler, Ringle, & Sarstedt, 2015). It should be noted that, as outlined before, our understanding follows the common factor paradigm, that is, the sub-dimensions explain a common variance (the EM variable) and not a composite factor paradigm (the sub-dimensions shape the EM variable), which is more appropriate to covariance-based techniques than to variance-based techniques (e.g., Sarstedt, Hair, Ringle, Thiele, & Gudergan, 2016). Again, since we are pessimistic about a unidimensional solution, that is, EM is explained sufficiently by one single factor, all second-level evaluation should not be based on a single dimension assumption. For

Table 4
Steps, procedures, and results to investigate dimensionality, reliability, and validity of measures.

Step	Procedures	Results
1	Separate EFAs for sub-dimensions RT, PA, IN, RL, MD and CO to assess dimensionality (oblique rotation, ML-estimator, one to three factors estimated iteratively)	All sub-dimensions except RL yielded one factor, second factor for RL not sufficient (Eigen value = 0.91), items rl3, rl4, rl5, and rl8 removed
2	Reliability checks for RT, PA, IN, RL, MD and CO (uni-dimensionality: Alpha and multi-dimensionality: Omega)	All sub-dimensions except RL showed sufficient Alpha and Omega values (RT: 0.75, 0.81; PA: 0.79, 0.85; IN: 0.84, 0.91; MD: 0.81, 0.84; CO: 0.81, 0.86), RL scored 0.65 and 0.79
3	Estimating general (common) factor for RL (Schmid-Leiman-transformation in Omega)	All four remaining items of RL (rl1, rl2, rl6, rl7) loaded > 0.2 on general factor
4	EFA for all remaining items from step 1 of RT, PA, IN, RL, MD and CO to remove cross-loadings (oblique rotation, ML-estimator, one to eight factors estimated iteratively)	Final solution proposed seven factors (Eigen values from 2.77 to 1.02), RL split into RL1 and RL2, items in1 and in2 removed due to cross-loadings and item pa4 removed due to insufficient loading on factor (< 0.3)
5	CFA for all remaining items from step 1 of RT, PA, IN, RL1, RL2, MD, and CO (ML-estimator, six and seven factors estimated iteratively, modifications checked using scaled differences in chi squares)	Items in1 and in2 of IN (Δ chi-square = 420.78, Δ df = 51, p = .000), co6 of CO (Δ chi-square = 117.79, Δ df = 24, p = .000), co5 of CO (Δ chi-square = 73.686, Δ df = 23, p = .000), and rt1 of RT (Δ chi-square = 47.167, Δ df = 22, p = .001) removed in that order, CFA for seven-factor solution was superior to CFA for six-factor solution (Δ chi-square = 218.35, Δ df = 6, p = .000). RL1 and CO showed AVE < 0.5
6	HTMT procedure for all remaining items from step 5 to assess discriminant validity (based on final CFA, ML-estimator, seven factors)	All sub-dimensions showed smaller H/M-ratios than 0.85 with largest ratio between PA and CO (0.45)
7	EFA for standardized factor scores of RT, PA, IN, RL1, RL2, MD, and CO (based on final CFA in step 5, oblique rotation, ML-estimator, one to seven factors estimated iteratively)	No solution showed Eigen values larger than one for all factors (e.g., for two-factor solution: 1.83 and 0.89, for three-factor solution: 1.61, 1.05, and 0.94, for four-factor solution: 1.06, 1.12, 1.14, and 0.64)
8	CFA for standardized factor scores of RT, PA, IN, RL1, RL2, MD, and CO (based on final CFA in step 5, ML-estimator, one to seven factors estimated iteratively)	Three-factor solution yielded best fit (CFI = 0.927, SRMR = 0.045, Chi-square = 133.026, df = 12) compared to all other solutions (one vs two factors: Δ chi-square = 62.940, Δ df = 1, p = .000; two vs three factors: Δ chi-square = 8.136, Δ df = 1, p = .004; three vs four factors: Δ chi-square = 1.393, Δ df = 1, p = .498), more than four factors showed no improvement
9	Reliability check for compound EM consisting of three dimensions (based on final CFA in step 8, uni-dimensionality: Alpha and multi-dimensionality: Omega)	EM yielded sufficient Alpha (0.73) and Omega (0.82)
10	Estimating explained variance for EM in CFA (based on final CFA in step 8, specified latent factor EM, ML-estimator, two and three factors estimated iteratively)	The latent EM factor accounts for 0.60 (one factor), 0.76 (two factors) and 0.81 (three factors) of variance based on standardized factor scores

Notes: EFA = Exploratory factor analysis, ML = Maximum Likelihood, CFA = Confirmatory factor analysis, AVE = Average variance extracted, RT = Risk-taking, PA = Proactiveness, IN = Innovativeness, RL = Resource leveraging, MD = Market-driving, CO = Customer orientation, p = p-value of respective test.

example, the second factor of a two-factor EFA solution cannot be assumed to have an average variance explained > 0.5 since this would yield the unrealistic conclusion that all factors account for more variance than their indicators. The conceptual framework regarding firm performance as well as robustness checks are evaluated with covariance-based structural equation modeling. All calculations were done in *R* (especially with the packages *psych* and *lavaan*).

4. Results

4.1. Dimensionality, reliability and validity of sub-dimensions

In order to start with assessing dimensionality, reliability, and validity of the sub-dimensions, step 1 (Table 4) applies separate EFAs. Based on this, four items from RL (items rl3, rl4, rl5, and rl8) were removed. All other sub-dimensions yielded one factor. In step 2, reliability checks showed that RL underscored thresholds of Alpha (0.65), but surpassed thresholds of Omega (0.79). However, step 3, which was conducted exclusively for RL, found that all four remaining RL items (rl1, rl2, rl6, rl7) loaded sufficiently on RL despite the rather low reliability. In step 4, subsequent EFAs found that seven instead of the assumed six factors are plausible, showing that the RL variable is rather a compound of two variables RL1 and RL2. Whereas RL1 relates to network usage to support cost conscious marketing programs, RL2 refers to cost-conscious business operations. Table 5 illustrates the loadings structure from step 4.

Advancing to CFA and applying scaled difference chi-square tests (Satorra & Bentler, 2001), some items (in1, in2, co5, co6, rt1) were removed iteratively in step 5. More importantly, CFA confirmed the finding from step 4 that the seven-factor solution is empirically

Table 5
Factor solution for seven dimensions.

Item	CO	PA	IN	RT	MD	RL1	RL2
rt1				.42			
rt2				.78			
rt3				.62			
rt4				.73			
pa1		.58					
pa2		.80					
pa3		.54					
pa4		*.24*					
pa5		.65					
in1		*.29*	*.28*				
in2		*.34*	*.28*				
in3			.57				
in4			.89				
in5			.78				
rl1							.61
rl2							.72
rl6						.82	
rl7						.68	
md1					.55		
md2					.66		
md3					.56		
md4					.64		
co1	.61						
co2	.55						
co3	.51						
co4	.69						
co5	.50						
co6	.51						
co7	.76						

Notes: Seven−factor solution with ML−estimator and oblique rotation, all loadings < .2 removed, Italics: Items removed after EFA.

Table 6
Latent variable correlations, average variance extracted, and fit statistics of the seven-factor model.

	RT	PA	IN	RL1	RL2	MD	CO
RT	*0.52*						
PA	0.47	*0.52*					
IN	0.41	0.58	*0.69*				
RL1	0.10	0.30	0.14	*0.46*			
RL2	0.18	0.33	0.18	0.43	*0.59*		
MD	0.35	0.60	0.70	0.28	0.33	*0.52*	
CO	0.15	0.47	0.42	0.32	0.32	0.43	*0.45*

Notes: CFA for seven factors, Chi-square = 897.184, df = 209, CFI = 0.932, SRMR = 0.045, Diagonal elements: average variances extracted.

superior. Table 6 depicts the latent variable correlations, average variances extracted (AVE), and fit statistics of this most fitting model. Despite two AVE's lower than the threshold of 0.5 proposed by Fornell and Larcker (1981) for RL1 and CO, discriminant validity was confirmed for all seven dimensions in step 6 (Table 4). Overall, measurement quality as indicated by reliability and validity is confirmed, except for two minor convergence validity issues in RL1 and CO. Since we investigate EM and both RL1 and CO are substantial parts of this concept, we continue with these two dimensions for now. Possible explanations for these validity issues are provided in the discussion section.

4.2. Dimensionality, reliability and validity of EM

In accordance with Covin and Miller (2014) who argue that EO should be understood as the common variance of its dimensions, risk-taking, proactiveness, and innovativeness, we argue that EM should capture some common variance of its sub-dimensions on a second order. Consequently, a common factor approach is more appropriate than a composite factor approach resulting in a more reflective than formative nature of EM (e.g., Finn & Wang, 2014). However, operationalizing a reflective second-order latent variable (Jarvis, MacKenzie, & Podsakoff, 2003) is not without issues, since many techniques, especially EFA, tend to confuse correlations within first-order latent variables with correlations among second-order dimensions. Hence, we followed the suggestion by Lee and Cadogan (2013) to treat the sub-dimensions as separate variables. As expected, applying factor scores in EFA did not yield sufficient results in step 7. We thus turned to CFA in step 8 (Table 4). Iterating through multiple versions, a three factor CFA replicated the data as best as possible. The dimensions can be understood as follows:

F1 (Change-driving): Proactiveness + Innovativeness + Market-driving

F2 (Bootstrapping): Resource leveraging 1 + Resource leveraging 2 + Customer-orientation

F3 (Risk-taking): Risk-taking

Step 9 assessed the reliability of EM. An estimate of 0.82 (Omega) is deemed more appropriate, since it allows to account for multiple dimensions. Thus, we can conclude that EM can be reliably measured if one includes its dimensional structure. All three dimensions loaded positively on EM. Finally, we turned to CFA in order to assess the explained variance assuming one or three dimensions of EM in step 10. Accounting for the three dimensions, 81% of the variation of EM can be explained – compared to 60% if all sub-scales are assumed to form one dimension. That is, incorporating the inner frame of EM with three distinct dimensions improves variance prediction of EM by up to 21% (Table 4). Scale items for the three EM dimensions can be found in Table 7.

4.3. Relationship of EM with firm performance

In order to assess the predictive validity of the EM scale, we link EM to firm performance. In this regard, four CB-SEM models are formulated and estimated: Model A describes the relationships of each of the seven sub-dimensions of EM, represented by their individual items, with firm performance. Model B applies the three dimensions of EM, as found above, and regresses factor scores on performance. Model C estimates a latent variable "EM" with the 7 sub-dimensions' factor scores as indicators and measures the performance effect. Finally, model D attempts to find a single indicator of EM and thus uses a composite of all seven sub-dimensions (index of factor scores) to predict performance. Illustrations for the four models A-D are provided in the appendix, a summary of the four models can be found in Table 8.

Model A replicates the loadings of each item on its sub-scale consistently exceeding 0.6 (lowest factor loading: rl2 on RL1 = 0.601, p = .000). Most importantly, only MD, RL, and CO contribute to firm performance and explain 21.1% of its variance. Comparably, model B confirms the loadings of the sub-scales on the three factors established through EFA and CFA, that is, all factor scores are reflected significantly by their respective factor (lowest factor loading: RL1 on F2 = 0.393, p = .000). Further, firm performance is explained by F1 alone but with an equivalent share of variance explained (20.9%). That is, using scale scores and accounting for the factorial structure of the sub-components of EM predicts firm performance comparably well. With respect to model C, the latent EM variable reflects significantly in all its seven sub-scale factor scores (lowest factor loading: RL1 on EM = 0.254, p = .000). R-squared is depleted (0.190). However, EM is predicting firm performance substantially (beta = 0.436, p = .000). Turning to model D, which incorporates an index of the seven sub-scales, a comparable result can be found. EM influences firm performance significantly (beta = 0.338, p = .000) and explains 11.4% of its variance.

Overall, simplifying EM via using scores or indexes decreases prediction of performance, a straightforward result. However, doing this by incorporating the inner frame of EM (model B) allowed us to maintain the prediction of performance compared to individual dimensions (model A).

5. Discussion

5.1. Overview

On the basis of existing literature, we developed and validated an EM scale that overcomes the limitations as presented in previous approaches (Fiore et al., 2013; Kocak, 2005; Schmid, 2012), revealing the inner frame – and not only the previously known individual dimensions – of EM. The new EM scale accounts for more variance of the common theme behind EM (81% instead of 60%) and predicts firm performance well. To our knowledge, we are the first to achieve the goal of establishing the higher order construct without severe theoretical or methodological issues. Since we follow the idea that EM is an approach that can be used by firms of all sizes, ages and industry affiliations (Kraus et al., 2010), we used a dataset that reflects this variety. We found that EM can be described with three factors: 1) change-driving, 2) bootstrapping, and 3) risk-taking.

Whereas change-driving is about firm behavior that challenges and goes beyond the status quo, bootstrapping scales are about grounding the firm with cost efficient, customer-focused marketing programs. It is this interplay of radical, proactive, market-driving behaviors and a more conservative, resource-leveraging customer focus that makes the core of EM. Research has shown that successful firms tend to use *both* approaches, mostly in subsequent order. It has been observed that an "innovation stage" that does not involve any customer participation is followed by a "pivoting stage," where the initial idea or business model

Table 7
EM scale items for three sub-dimensions.

Change-driving	
pa1	We continuously try to discover additional needs of our customers of which they are unaware.
pa2	We consistently look for new business opportunities.
pa3	Our marketing efforts try to lead customers, rather than respond to them.
pa5	We work to find new businesses or markets to target.
in3	We consider ourselves to be an innovative company.
in4	Our business is often the first to market with new products and services.
in5	Competitors in this market recognize us as leaders in innovation.
md1	We always try to develop new products that should challenge our customers to rethink their purchasing behaviors.
md2	We are market pioneers and act on the assumption that consumers and competitors follow us.
md3	We consistently pick up ideas from other industries to surprise our customers and competitors.
md4	We consistently develop new, spectacular marketing concepts, which our competitors imitate.
Bootstrapping	
co1	We constantly monitor our level of commitment and orientation to serving customer needs.
co2	We freely communicate information about our successful and unsuccessful customer experiences across all business functions.
co3	Our strategy for competitive advantage is based on our understanding of customer needs.
co4	We measure customer satisfaction systematically and frequently.
co7	Data on customer satisfaction is disseminated at all levels in this business unit on a regular basis.
rl1	In our business, we use connections to friends, business partners, etc. to get cost-efficient access to information and advice.
rl2	In our business, we explore options to operate in cost-efficient ways.
rl6	We work with other firms to refer business in order to save on marketing costs.
rl7	We use connections to other firms to increase our offerings in cost-efficient ways.
Risk-taking	
rt2	To make effective changes to our offering, we are willing to accept at least a moderate level of risk of significant losses.
rt3	We encourage people in our company to take risks with new ideas.
rt4	We engage in risky investments (e.g. new employees, facilities, debt, stock options) to stimulate future growth.

Table 8
Estimates of relationship with firm performance in models A-D.

Independent variable	Model A			Model B			Model C			Model D		
	β	*z*	*p*	β	*z*	*p*	β	*z*	*p*	β	*z*	*p*
Proactiveness	0.02	0.36	0.72									
Innovativeness	−0.03	−0.47	0.64									
Market-driving	0.43	6.62	0.00									
Resource leveraging 1	−0.03	−0.61	0.54									
Resource leveraging 2	−0.14	−3.26	0.00									
Consumer orientation	0.11	2.62	0.01									
Risk-taking	0.05	1.29	0.20									
F1 (Change-driving)				0.55	7.17	0.00						
F2 (Bootstrapping)				−0.13	−1.63	0.10						
F3 (Risk-taking)				−0.04	−1.04	0.30						
EM*							0.44	11.95	0.00	0.34	11.31	0.00
R-squared		0.21			0.21			0.19			0.11	

Notes: CB-SEM with ML-estimator, *: EM definition in model C = latent variable with indicators PA, IN, MD, RL1, RL2, CO, RT as factor scores; in model D = composite of factor scores PA, IN, MD, RL1, RL2, CO, RT; β = Standardized regression coefficient.

is tested with potential users (see e.g. Eggers & McCabe, 2016). Therefore, this interplay between change-driving and bootstrapping shares commonalities with the lean-startup approach that focuses on inventing and quick testing of business concepts (Ries, 2011). Moreover, the bootstrapping dimension reflects what Sarasvathy (2001) calls effectuation. Here, two of the main principles are *networking* to reduce market uncertainties and *affordable loss*, where the entrepreneur invests only as many resources into new projects as he can afford to lose.

Interestingly, risk-taking was identified as third EM dimension. Risk-taking is a factor that is inherent in both change-driving and bootstrapping. Whereas going beyond customer needs and wants clearly is a risky move, the opposite – i.e. focusing on customers and cost-conscious behavior – is also risky. Regarding the latter, the firm might miss out on growth opportunities or even be led into unprofitable directions. As our results show, while bootstrapping and risk-taking have no isolated effect on firm performance (only change-driving has, model B), but reinforce EM, the interplay of all three dimensions makes EM a successful tool (models C and D).

5.2. Practical implications

This article provides implications for both academics and practitioners. For academics, we finally provide a measurement scale, based on previously proposed concepts, that portrays the frame of EM – and we believe it does so quite accurately. Thus, researchers now have a tool in place to measure EM's unique performance impact, compare the level of EM as executed by different firms, measure its antecedents, contrast it with other marketing approaches, etc. To further simplify the admittedly abstract options to use the EM construct as a measure, we provide a more detailed procedure. Fig. 1 describes two ways to generate either factor compounds to measure each of the three factors or a formative single compound to represent EM itself by applying standard tools such as EFA, CFA, Cronbach's Alpha, indexing, regression or SEM. For the sake of comparability, correctly specifying an overall EO or its components would require a similar number of steps (see e.g., Covin & Miller, 2014; Covin & Wales, 2012).

For practitioners, this article highlights the importance of EM's three

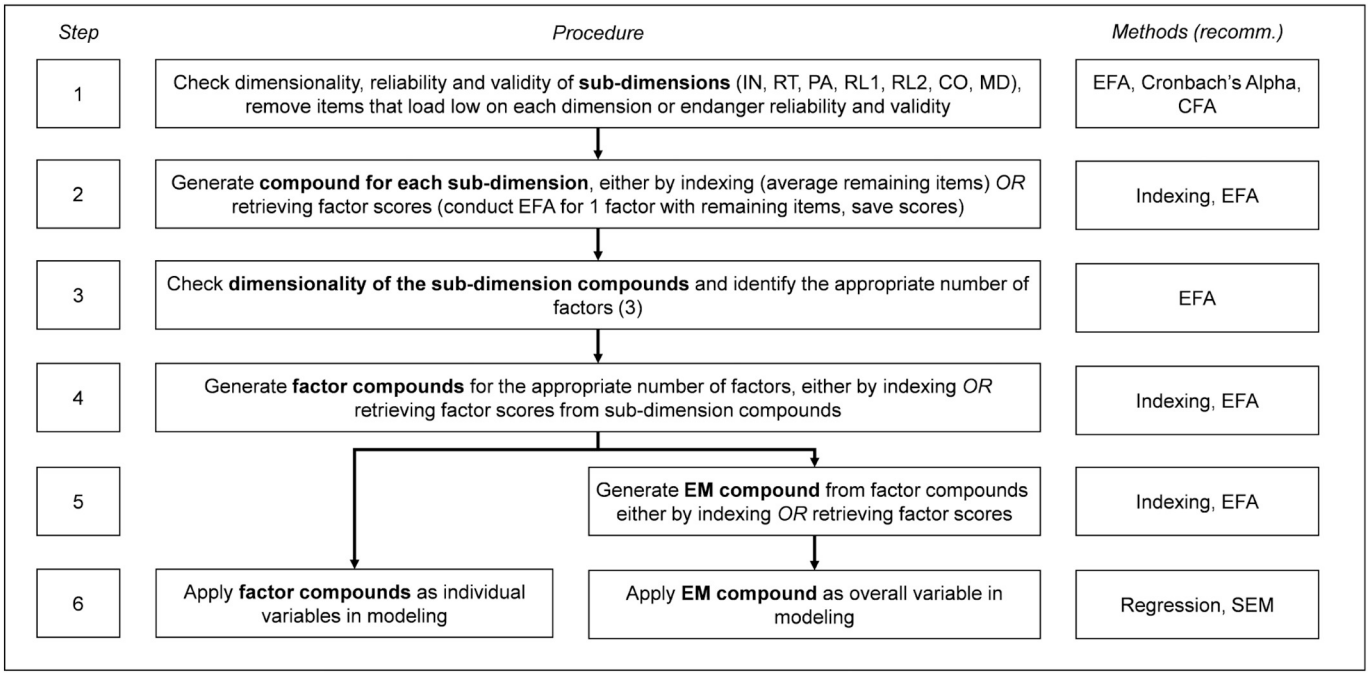

Fig. 1. Measuring EM.

sub-dimensions and their potential interplay that shapes the overall frame of EM. In this regard, it shows that bootstrapping or risk-taking alone are not performance enhancing strategies. Change-driving is needed to make the marketing approach "entrepreneurial". According to Morris et al. (2002), EO, together with market orientation and organizational climate variables, is treated as an element of a firm's internal organizational environment that determines the organizational approach to marketing. In other words, an EM campaign can only be properly executed if the firm is entrepreneurial, market-oriented, and has an appropriate organizational culture, hierarchies, etc. The premise of having an entrepreneurial mindset is particularly challenging. EO is considered a firm-level phenomenon (Miller, 1983). That means it is not enough for the entrepreneur or marketing manager to think and act entrepreneurially. Rather, for a firm to be considered entrepreneurial, EO must be lived throughout the organization (Hughes, Rigtering, Covin, Bouncken, & Kraus, 2018). Given that being entrepreneurially oriented is an antecedent to EM makes EM implementation particularly challenging. This also distinguishes it from other marketing approaches that do not require a certain organizational mindset.

5.3. Limitations and future outlook

This paper is not without limitations. First, our data collection focuses only on one country and covers a wide span of firms and industries. Although it was our goal to cover a variety of firms, it might be of interest to see in more detail how EM differs from young to old firms, from small to large, or from industry to industry. Also, the market characteristics of a developed, Western European country might have impacted scale development. Therefore, testing, or even re-developing the scale in different contexts, might be recommended.

Second, this study was conducted at a certain point in time, that is, long-time effects of EM and its development could not be investigated. Therefore, longitudinal studies might be of interest to study the interplay of the three EM dimensions over time, its short- and long-term effects on business performance, and how network relationships influence EM strategies.

Third, in the process of scale development, several scale items were deleted. Although all sub-scales of EM are intended to reflect one dimension and it is a common procedure in scale development to omit items that do not load sufficiently on that dimension (Gerbing & Anderson, 1988), one could ask if this approach harmed the explanatory power of the sub-scales. We thus carefully investigated single items by multiple approaches and kept them as long as reasonable, but in particular the RL sub-scale lost 4 out of 8 scale items. However, this can be attributed to a flaw in its operationalization (Schmid, 2012). A closer look at the deleted items reveals that these deal with an inward-looking, operational perspective, rather than a strategic orientation. The remaining items, as used in our EM scale, focus on cost-conscious marketing and networking behaviors and therefore feature core RL elements in the context of EM. It is a surprising find that our study revealed two RL dimensions. However, this might be related to different resource types involved. Whereas one dimension is about leveraging organizational resources, deals the other one with relational resources (Hunt & Madhavaram, 2006; Ostendorf et al., 2014). Overall, more research is needed in terms of RL and its measurement. Also, given that CO lost two items, subsequent research may focus on measures for all dimensions of EM that are more reliable. To the best of our knowledge, no better measures are available so far.

Fourth, despite the results confirming a reliable and valid EM scale, the question whether EM is reflective or formative on a conceptual level could not be answered so far. We encourage subsequent theoretical work to address this question.

Fifth, we claimed above that EM might be a particularly successful approach for resource-constrained firms. However, we have not measured if this is indeed the case. Therefore, a better understanding is needed what "resource-constrained" means in this context and which resources, or a lack thereof, might play a special role in enhancing the success of EM. In this context, it might be of interest to see if and how dynamic capabilities (Eisenhardt & Martin, 2000) support and even hinder the execution of EM programs.

Sixth, risk-taking, in particular *managerial* risk-taking (see e.g., Hoskisson, Chirico, Zyung, & Gambeta, 2017) is receiving more attention in the literature. Results of this study underscore the importance of taking a closer look at risk-taking as a concept within entrepreneurship and EM.

Overall, we hope that the newly derived EM scale further encourages EM research and helps to further legitimize this field of study in neighboring disciplines such as strategic management, marketing, or entrepreneurship.

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Appendix A. Appendix

Table A.1
EM sub-scales and performance indicators.

Entrepreneurial orientation		
Risk	*rt1*	*We value new strategies/plans even if we are not certain they will always work.*
	rt2	To make effective changes to our offering, we are willing to accept at least a moderate level of risk of significant losses.
	rt3	We encourage people in our company to take risks with new ideas.
	rt4	We engage in risky investments (e.g. new employees, facilities, debt, stock options) to stimulate future growth.
Proactiveness	pa1	We continuously try to discover additional needs of our customers of which they are unaware.
	pa2	We consistently look for new business opportunities.
	pa3	Our marketing efforts try to lead customers, rather than respond to them.
	pa4	*We incorporate solutions to meet unarticulated customer needs in our products and services.*
	pa5	We work to find new businesses or markets to target.
Innovativeness	*in1*	*When it comes to problem solving, we value creative new solutions more than solutions that rely on conventional wisdom.*
	in2	*We value new product lines highly.*
	in3	We consider ourselves to be an innovative company.
	in4	Our business is often the first to market with new products and services.
	in5	Competitors in this market recognize us as leaders in innovation.
Customer orientation		
Customer-orientation	co1	We constantly monitor our level of commitment and orientation to serving customer needs.
	co2	We freely communicate information about our successful and unsuccessful customer experiences across all business functions.
	co3	Our strategy for competitive advantage is based on our understanding of customer needs.
	co4	We measure customer satisfaction systematically and frequently.
	co5	*We are more customer-focused than our competitors.*
	co6	*I believe this business exists primarily to serve customers.*
	co7	Data on customer satisfaction is disseminated at all levels in this business unit on a regular basis.
Resource leveraging		
Resource leveraging	rl1	In our business, we use connections to friends, business partners, etc. to get cost-efficient access to information and advice.
	rl2	In our business, we explore options to operate in cost-efficient ways.
	rl3	*In our business, we use equipment, machinery, and facilities as long as they serve their purpose, although we could afford more modern replacements.*
	rl4	*In our business, we purchase equipment and machinery since leasing on a case-by-case basis is not an option.*
	rl5	*In our business, we lease our personnel, equipment, and rooms if they are not used to capacity over a longer period of time.*
	rl6	We work with other firms to refer business in order to save on marketing costs.
	rl7	We use connections to other firms to increase our offerings in cost-efficient ways.
	rl8	*Our employees do not expect immediate rewards whenever they increase their commitment.*
Market-driving		
Market-driving	md1	We always try to develop new products that should challenge our customers to rethink their purchasing behaviors.
	md2	We are market pioneers and act on the assumption that consumers and competitors follow us.
	md3	We consistently pick up ideas from other industries to surprise our customers and competitors.
	md4	We consistently develop new, spectacular marketing concepts, which our competitors imitate.
Firm performance		
	fp1	*In the last five years, we achieved a higher revenue growth than our (direct/indirect) competitors.*
	fp2	*In the last five years, we achieved a higher profit growth than our (direct/indirect) competitors.*
	fp3	*In the last five years we achieved a higher growth in employees than our (direct/indirect) competitors.*
	fp4	*In the last five years we achieved a higher market share growth than our (direct/indirect) competitors.*

Notes: Italics - Items removed after EFA and CFA

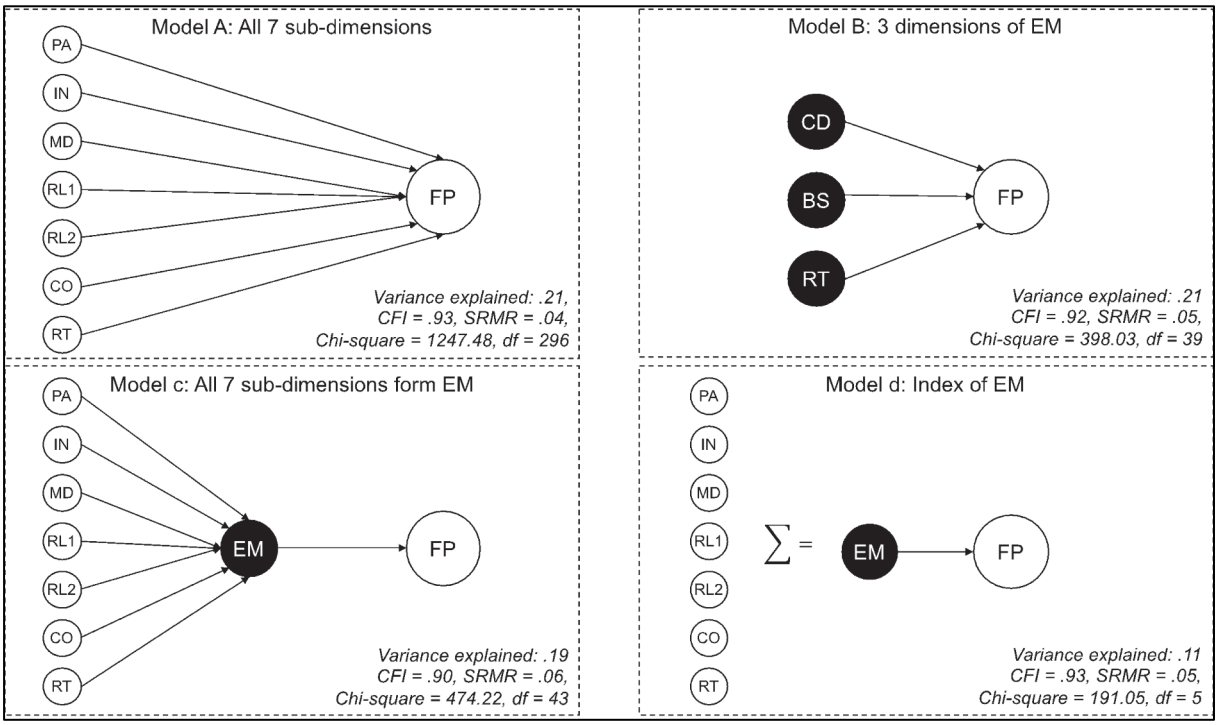

Fig. A.1. Illustrations of the four models predicting firm performance.

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