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Theoretical 71-concept platform for advancing construction-related business management

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Abstract

The aim is to advance business management (BM) in construction via the independent literature review. 71 construction-related BM concepts have been published between 1990 and 2013. Focal firms are based in the OECD countries. 34 (48%) concepts are related to construction management (CM), 14 (20%) concepts to industrial management and international marketing, 12 (17%) concepts to project management (PM) and 11 (15%) concepts to corporate real estate. The combined share of 16 Porterian, 16 dynamism-based, 15 organisation-based, and 10 knowledge-based concepts is 81%. The 71-concept platform is neither highly theoretically advanced, nor highly applicable. The propositions are defined for advancement.

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Keywords: Applied research; business management; conceptualisation; construction; literature review; real estate; school of thought

1. Introduction

Managing a single business (un)successfully is herein seen as the most significant area of strategic management (Huovinen, 2003). The focus is on managing a single business as issues, enabled by people. In particular, Porter (1994) has proposed that to explain competitive success, we need a theory of strategy that links environmental circumstances and firm behaviour to market outcomes. The unit of analysis must be a strategically distinct business. In the same vein, business management (BM) research is perceived as the most challenging field within strategic management research. Dynamism involves even chaotic businesses that firms co-create or find themselves in. It

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seems that criticism toward poor applicability of research (e.g. Franklin, 2004) particularly concerns BM concepts.

The reviewing of construction-related BM concepts has been going on since 1999. The unit is a concept that an author has designed for managing a business with a context in construction and that has been published in English primarily via journals since 1990. Readily, many overviews have been compiled (Huovinen, 2004, 2006a-c, 2010). In turn, the aim of this paper is to advance theoretical knowledge about BM in the case of firms competing in contexts embedded within construction markets. The rationale is unfolding via the eight questions as follows.

2. Conduct of the reviewing of construction-related BM concepts since 1999

Question 1. How rigorously has the reviewing of construction-related BM concepts been conducted? Conceptual research reviews are independent pieces of scientific research that investigate published concepts in targeted areas of management. Aligning with Hart (1998), this reviewing aims at (a) showing understanding and a variety of approaches with definitions to construction-related BM, (b) citing and discussing landmark concepts with(out) empirical evidence, (c) stating conclusions on research and concepts, (d) showing gaps, (e) pointing out to ways of closing such gaps (i.e. producing more advanced and applicable concepts) and (f) reaching recommendations.

The six limitations are as follows. (i) Cooper (1998) states that a reviewer should include all eligible units at the outset. Exclusion may be appropriate only when rules are defined ex ante and a number of identified concepts is large enough for substantiating conclusions. Thus, the four relevance rules, the 14 elimination rules and the five inclusion rules were specified in 1999. The initial 35-concept population was evaluated to be large enough (Huovinen, 2003). (ii) The assessment of causalities built inside BM concepts is excluded because only primary source-generated evidence based on experimental research allows one to make statements concerning causality (Cooper, 1998). Only the existence of relations is recognised. (iii) The detailed review of qualitative, empirical research methods is excluded. A reviewer cannot judge objects, i.e. if one were to judge one would be making a commitment to one methodological position (Hart, 1998). Only the types of empirical evidence are recognised. (iv) Conceptual studies cannot be verified as long as researchers neither clearly report on methodologies, nor have conventions for verification (Miles and Huberman, 1994). Thus, the assessment of documentation is excluded, even if the breadth and depth of the reporting vary within the references. (v) The coherent nature of BM is maintained by focusing on research on firms based in the OECD countries. Exceptionally, Singapore and Hong Kong are included due to these authors' British Commonwealth heritage and interests in global construction. (vi) Concepts are abstractions representing objects or phenomena, e.g. a firm managing its business (Ghauri and Gronhaug, 2002). The authorship of each eligible BM concept answers the question "What is a principal way of managing a business that will enable managers to set challenging goals and also attain them?" A population consists of (a) BM concepts explicitly and causally related to goals setting and/or attainment, (b) BM concepts related to goals, but indirectly or implicitly, (c) competitiveness management concepts explicitly and causally enabling BM performance with goals setting and/or attainment and (d) competitiveness management concepts related to goals, but indirectly or implicitly.

The review method is based Cooper's (1998) approach to protect validity through (i) problem formulation, trade-offs in aims-setting versus originality and a review plan, (ii) comprehensive search for eligible references, (iii) the analytical reading and evaluation of references, (iv) the analysis of BM concepts, and (v) the design and writing of a report. Hart's (1998) handbook on conducting reviews of qualitative and conceptual research was relied upon. All the replicable, handbook-based and invented-here ways for searching, browsing, in-/excluding, retrieving, moderate coding, exposing, describing, analysing and interfering with conceptual BM data have been documented, used and reported upon in Huovinen (2003, 2006b, 2008 and 2010) to make this review process open to criticism and debate.

The four reviewing rounds have been conducted in 1999-2003, 2006, 2010-2012 and May-June 2014. The 1990-2013 volumes of 21 construction-related journals and those of 47 business administration journals have been browsed. This is so because most rigorous criteria are being applied to pre-reviewing manuscripts for publishing via journals. The degrees of the search comprehensiveness vary markedly among the other channels (Table 1). No pre-limiting search words have been used. Instead, the hands-on search has implied the reading of thousands of lists of contents, titles and abstracts as well as the browsing of hundreds of texts. Overall, 71 eligible, construction-related BM concepts were identified to have been published between 1990 and 2013, thereof 34 (48%) concepts via 13 journals (Table 2). This reviewer will submit the other channel-specific lists on request.

Table 1 Channel distribution of 71 construction-related BM concepts (68 references) published btw. 1990-2013. Search scope varies in 2003, 2006, 2010-2012 and 2014. (Key: a 4 concepts in 1 book. b 1 concept in 2 articles. 1 concept in 1 report and 1 article. c 2 concepts in 1 article.)

Channel	Comprehensiveness of search rounds by years of publishing of references	No. of references No.	(%)	No. of concepts No.	(%)
Construction-related books and reports	1990-2002: 9 international publishers 2003-2013: Selectively	6a	(9%)	9	(13%)
Other management books and reports	1990-2002: 18 international publishers 2003-2013: Selectively	1	(1%)	1	(1%)
Chapters in edited, construction-related books and reports	1990-2002: 9 international publishers 2003-2013: Selectively	3	(4%)	3	(4%)
Chapters in other edited management books and reports	1990-2002: 9 international publishers 2003-2013: Selectively	1	(1%)	1	(1%)
Construction-related journals	1990-2005: 25 journals 2006-2013: 21 journals	35b	(51%)	34	(48%)
Other management journals	1990-2008: 42 journals 2009-2013: 45 journals	8c	(15%)	9	(13%)
Construction-related conference proceedings	1990-2005: 22 international conferences 2006-2013: Selectively	14	(21%)	14	(20%)
Sum	-	68	(100%)	71	(100%)

Table 2 Numbers of articles containing BM concepts, published via 13 (out of 21 browsed) construction-related journals btw. 1990-2013.

Journal, volumes published btw. 1990-2013, or year- indicates between 1st year and 2013 Publisher (during the browsing in May-June 2014)	Articles No.	(%)
01 Construction Management and Economics, volumes 8-31 Taylor & Francis Group, Routledge	7	(20%)
02 International Journal of Project Management, volumes 8-31 Elsevier, International Project Management Association (IPMA), and Association for Project Management (APM)	5	(14%)
03 Journal of Management in Engineering, volumes 6-29 American Society of Civil Engineers (ASCE)	4	(11%)
04 Journal of Corporate Real Estate, volumes 1-15 1999-	3	(9%)
05 Journal of Facilities Management, volumes 1-11 2002- Emerald Group Publishing	3	(9%)
06 Journal of Real Estate Research, volumes 5-35 American Real Estate Society (ARES)	3	(9%)
07 Project Management Journal, volumes 21-44 Project Management Institute (PMI) and Wiley	3	(9%)
08 Engineering, Construction and Architectural Management, volumes 1-20 1994-	2	(6%)
09 Facilities, volumes 8-31 Emerald Group Publishing	1	(3%)
10 Journal of Construction Engineering and Management, volumes 116-139	1	(3%)
11 Leadership and Management in Engineering, volumes 1-13 2001- American Society of Civil Engineers (ASCE)	1	(3%)
12 PM Network, volumes 4-27 Project Management Institute PMI)	1	(3%)
13 Project Perspectives, volumes XXVII-XXXV 2004- (and as Project Management volumes 1-9 1995-2003) Project Management Association Finland (PMAF) and International Project Management Association (IPMA)	1	(3%)
14 Building Research & Information, volumes 18-41 Taylor & Francis Group, Routledge	0	(0%)
15 Construction Innovation, volumes 1-13 2001- Emerald Group Publishing	0	(0%)
16 Cost Engineering, volumes 32-55 The Association for the Advancement of Cost Engineering (AACE International)	0	(0%)
17 Engineering Management, IEEE Transactions on, volumes 37-60 IEEE Technology Management Council	0	(0%)
18 Engineering Project Organization Journal, volumes 1-3 2011- Taylor & Francis Group and Engineering Project Organization Society (EPOS)	0	(0%)
19 ITcon, Electronic Journal of IT in Construction, volumes 1-18 1996- International Council for Research and Innovation in Building and Construction (CIB)	0	(0%)
20 Journal of Real Estate Portfolio Management, volumes 1-19 1995- American Real Estate Society (ARES)	0	(0%)
21 Property Management, volumes 8-31 Emerald Group Publishing	0	(0%)
Sum	35	(100%)

3. Overview of the six key characteristics of the 71-concept platform

Question 2. What is the relatedness to applied disciplines? 34 (48%) BM concepts are related to construction management (CM), 12 (17%) BM concepts to project management (PM), 11 (15%) BM concepts to corporate real estate services and 14 (20%) BM concepts to industrial management or international marketing. However, no traditions in BM research exist.

Question 3. What are the targeted market contexts of focal firms? In total, there are 74 contexts, i.e. 21 (28%) global, 15 (20%) UK, 12 (16%) US, 10 (14%) Finnish, 4 (5%) generic, 4 (5%) Swedish, 2 (3%) Australian, 1 (1%) EU, 1 (1%) Dutch, 1 (1%) French, 1 (1%) German, 1 (1%) Swiss and 1 (1%) Hong Kong–based context.

Question 4. What is the relatedness to the eight schools of thought on generic BM? This reviewer has been able to assign each concept to one school based on the authors' (in)direct replies to the question "What is the primary way of managing that will enable managers to set challenging business goals and also to attain them?" (Huovinen, 2008) and the root references. The combined share of 16 Porterian, 16 dynamism-based, 15 organisation-based and 10 knowledge-based concepts is 81%. The temporal pattern is emerging. The content pattern is fragmented (Table 3).

Question 5. What are the levels of applied theoretical advancement among the concepts? As expected, neither high-level concepts, nor the high-novelty ones have been designed. 44 (62%) authors have adopted the existing generic BM concepts and relied on them for the empirical investigations, respectively. 27 (38%) authors have incorporated at least one applied element into their respective concepts for managing in focal contexts (Table 4).

Question 6. For what business contexts have the concepts been designed? 25 (35%) concepts are designed for project-based business, contracting, complex systems or engineering-purchasing-construction (EPC), 25 (35%) concepts for construction/building, 10 (14%) concepts for corporate real estate services, 5 (7%) concepts for capital investments-based business, 4 (6%) concepts for design/consulting and 2 (3%) concepts for building products.

Question 7. How high degrees of applicability can be assigned to the concepts? The degrees are fairly low on average. Namely, only those 27 (38%) BM concepts contain (inter)national context or business-specific elements (Table 4). 30 (42%) BM concepts are supported with the case-based evidence, respectively.

4. Advancement of construction-related BM knowledge

Question 8. What kinds of propositions can be put forth to advance applied knowledge for managing businesses in contexts embedded within construction? The 71-concept platform contains neither highly theoretically advanced, nor highly applicable knowledge. Thus, the five propositions are defined for future advancement as follows.

Proposition 8.1. Applied BM concepts are highly theoretical when generic roots (e.g. theories) are selected so that targeted phenomena in focal contexts are explained, assumptions are defined so that alternative states of phenomena are foreseen as well as structures and elements are designed along dimensions within phenomena, respectively.

Proposition 8.2. Applied BM concepts are highly novel when particular generic roots, assumptions, design dimensions, structures and elements, or combinations of them (e.g. outside-in and inside-out logics for technology-intensive contracting) are incorporated into them for the first time, respectively.

Proposition 8.3. Applied BM concepts are highly useful in managing with business-specific contexts when elements are specified along relevant business scope dimensions (e.g. housing development), respectively.

Proposition 8.4. Applied BM concepts are highly useful in managing with global contexts when elements are specified along relevant dimensions (e.g. core offerings being leveraged on multiple continents), respectively.

Proposition 8.5. Applied BM concepts are highly useful in managing with local contexts when elements are specified along relevant dimensions (e.g. public root client groups within each Nordic country), respectively.

5. Conclusion

It seems that the 15-year reviewing process is unique. However, this reviewing has been protected only in part against the formal publication channel bias, i.e. a difference between a number of the identified 71 construction-related BM concepts (published between 1990 and 2013) and the size of the true population. The latter may consist of 85-90 BM concepts. Thus, this reviewer will cover more publishing channels in the future.

It is claimed that the familiarity of the 8-school BM and the 71-concept platform enables managers to choose next BM concepts and apply them with focal contexts in construction so that likelihood to succeed is high, respectively.

Table 3. Relatedness of 71 construction-related BM concepts (published btw. 1990-2013) to the eight schools of thought.

School of thought on generic business management BM)	Concepts published btw 1990-2002 No. (%)	Concepts published btw 2003-2009 No. (%)	Concepts published btw 2010-2013 No. (%)	All concepts published btw. 1990-2013 No. (%)
1 Porterian school	11 (29%)	4 (15%)	1 (14%)	16 (23%)
2 Resource-based school	1 (3%)	0 (0%)	1 (14%)	2 (3%)
3 Competence-based school	3 (8%)	2 (8%)	0 (0%)	5 (7%)
4 Knowledge-based school	7 (18%)	3 (12%)	0 (0%)	10 (14%)
5 Organisation-based school	9 (24%)	5 (19%)	1 (14%)	15 (21%)
6 Process-based school	0 (0%)	7 (27%)	0 (0%)	7 (10%)
7 Dynamism-based school	7 (18%)	5 (19%)	4 (57%)	16 (23%)
8 Evolutionary school	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Sum	38 (100%)	26 (100%)	7 (100%)	71 (100%)

Table 4. Twenty-seven BM concepts (published btw. 1990-2013) with elements designed for focal contexts within construction markets.

School	Reference	Type and focal context	Scope	Elements designed for managing a business in focal contexts
1	Winch and Schneider (1993)	4 competitive strategies for UK architectural practices	Medium	1 Strong delivery, 2 experience, 3 ambition and 4 ideas along the dimensions of project complexity and quality
1	Jennings and Betts (1996)	Strategy model for UK quantity surveying practices	Medium	1 Execution, 2 expertise, 3 efficiency and 4 experience along the dimensions of service level and client base
1	Roulac (1999)	RE's connections to value chains	Large	9 activities, 8 roles, 7 implications, 5 applications, 7 connections
1	Roulac (2001)	Corporate property strategy in US	Large	8 RE strategies with 7 place & space contributions to advantages
1	Huovinen (2001)	Fit framework for contractors	Large	1 business scope, aims, 2 marketing, 3 solutions and 4 contract
1	Rapp (2001)	Adapted 5 forces and a client value chain in US construction	Narrow	Speedy response as a 3rd basis for competing, suppliers include also subcontractors, resource types and project delivery modes
1	Singer et al. (2007)	Competitive and real estate (RE) strategies in Dutch MNCs	Medium	1 Incremental RE strategy, 2 value-based RE strategy , 3 standardisation RE strategy combined, by each competitive strategy
1	Chiang et al. (2008)	Volume building strategy for contractors based in Hong Kong	Narrow	Innovation in building process with or without prefabrication in public housing
1	Heywood and Kenley (2008)	Model of CREM and sustainable advantage in Australia	Large	2 clusters of CRE unit practices (4 areas) and technical CREM practices (8 operational strategies)
1	Huovinen (2011a)	4 businesses in 8 EU arenas	Large	Implanting sustainability into 8 arenas with competing firms
2	Lowendahl (1997/2000)	Resource-based strategies for (US) professional service firms	Large	Client relation based (A), solution or output based (B) and problem solving or creativity based (C) strategies
3	Langford and Male (2001)	Strategies for international construction, UK firms' progress	Narrow	9 key sources (abilities) of competitive advantage for international contractors
3	Davies et al. (2007) (2007)	Model for UK firms to integrate capital goods into systems sales	Medium	10 advantage types applied to (i) pure systems sellers and (ii) pure systems integrators
3	Helander and Möller (2007)	Model for global system suppliers' customer strategies	Medium	1 Customer's strategy, 2 supplier's roles (performance or solution provider, equipment/material supplier) and 3 network resources
4	Huovinen (2003)	Knowledge-based BM concept	Medium	5 knowledge-/CIMs-based elements, applying Huovinen (2002)
4	Borner (2004)	Project and success-oriented KM model for Swiss D-B contractors	Medium	7 knowledge cluster types (experience, collaboration, efficiency, interfaces, customer's changing needs, risks, difficult tasks)
5	Hobday (2000)	Project-based organization (PBO) form for UK firms with CoPS	Large	Pure PBO or consortium with major projects embodying also business functions instead of a matrix or functional organization
5	Turner and Keegan (2000)	6-step model for OM in Dutch project-based organisations	Medium	1 Order winning, 2 planning, 3 procurement, 4 components configuration, 5 commissioning, delivery and 6 customer support
5	Huovinen and Hawk (2003)	Model of collaboration btw building product suppliers and clients	Large	1 Client groups, 2 procurement modes, 3 supplier characteristics, 4 pre-emptive marketing, 5 client's criteria, 6 contract fulfilment
5	Huovinen (2004)	Organisation-based BM concept	Medium	5 organisation-/CIMs-based elements, applying Huovinen (2002)
5	Kiiras and Huovinen (2004)	Virtual CM company model for building contractors in Finland	Medium	1 Core with company management and project managers with 2 competitive network of special system contractors
6	Kaya et al. (2004)	World-class facility management (FM) framework for UK firms	Medium	Roles of FM as 1 translator, 2 processor and 3 demonstrator as well as the reframing of FM projects as business projects
7	Lampel (2001)	Modified core competencies theory for UK EPC contractors	Medium	4 Core competence types, core processes (instead of products), and 3 strategies (focusing, switching, combining)
7	Huovinen (2002)	Competitiveness framework	Medium	1 Offerings, 2 processes, 3 competitiveness, 4 firm and 5 frame
7	Huovinen (2005)	Recursive, 3-system BM concept	Medium	Boundary foresight (3rd), system redesign (2nd), IB managing (1st)
7	Girmscheid (2010)	Industrialisation in construction based on 3 business models	Medium	1 Unique products (one-off customisation), 2 systems (mass customisation), and 3 mass products (mass production)
7	Huovinen (2011b)	High-sustainability BM concept	Medium	5 high-sustainability elements, applying Huovinen (2002)

Appendix A. List of 71 construction-related BM concepts published between 1990 and 2013

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