

Exploring the relationship between organizational capability and self-directed learning - a meta-analysis of empirical studies

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Abstract- Industrial transformation and more fluid engagement models with workforce has catapulted the need for self-directed learning (SDL) characteristics among employees for enhanced organizational capability as evident from existing studies. Previous empirical studies however call out few SDL characteristics as antecedents of some specific organizational capability measures. Organizational capability studies in general, on the other hand are also restricted by the impediments associated with its identification and measurement (Grant & Verona, 2015). Researchers have used observable indicators of underlying organizational capability to study and establish its relationships with SDL characteristics of employees authentically. The present research estimates the effect size of the relationship between self-directed learning characteristics among employees and Organizational capability using meta analysis techniques. The results from statistical aggregation of 25 empirical SDL- Organizational Capability studies demonstrate an overall reported correlation of 0.34.

Keywords – Organizational Capability, Self-directed learning, Self Learning, eLearning

I. INTRODUCTION

As the need for life-long learning grows, the attributes and characteristics associated with self-directed learning gain more importance for individuals as well as organizations. There is a general vote for taking responsibility for own learning among employees. Individuals, Organizations and governing bodies are seeking out for SDL characteristics among individuals and are investing heavily in self-help platforms and technology to help people upskill or reskill periodically (Deepa & Sujatha, 2020). Rise of the gig economy has increased the autonomous status of individual professions. Agility to learn by self-direction has a positive impact on individual professional identity to thrive in the boundaryless economy (Deepa & Sujatha, 2020). While these are significant reasons to drive focus on building SDL culture, there is also a debate

around SDL of employees and increased need for strengthening alignment with organizational capability requirements. However, there are published studies that derive positive correlations to various SDL characteristics in employees with organizational capability. We use meta-analysis techniques to estimate the effect size of this relationship. Organizational capabilities are latent constructs and bring forth the capacity of the firm to undertake a particular activity or function but can be observed only post facto, after the activities are performed (Grant & Verona, 2015). Given these constraints, researchers have used observable indicators of underlying capability in empirical studies to study factors associated with organizational capability. This paper discusses the changing nature of Organizational capability, characteristics of self-directed learners and the relation between SDL and Organizational capability in the next section. We use the meta-analysis technique explained in section 3. In the remaining article we present the key results of the meta-analysis and finally conclude the discussion and findings.

II. LITERATURE REVIEW

2.1 Organizational Capability and its Measurement

Theories of competitive advantage, strategy, learning, change and adaptation use organizational capability as a central construct. It is defined by what an organization is really good at doing over a sustained period of time. The collective skills, abilities, expertise and the way in which people and resources have been brought together to accomplish work. It defines the organization's identity which is way too difficult for competitors to copy unlike a product or technology strategy. When an organization delivers with the collective competencies and abilities of individual employees, we see the emergence of organizational capabilities. While there is no comprehensive list to refer (Ulrich & Smallwood, 2004) have called out 11 such capabilities that most organizations tend to have as a competitive advantage, namely -Talent, Speed, Shared mindset & coherent brand identity, accountability, collaboration, learning leadership, customer connectivity, strategic unity, innovation & efficiency (Ulrich & Smallwood, 2004). The basic problem for empirical research in the area of organizational capability is that these are fundamentally unobservable, remain as latent constructs. Performance is often a reflection of capability but it is influenced by contextual factors too. Researchers generally use questionnaire methods or observable proxies to measure organizational capabilities in their studies. However, self – reported questionnaires are subject to errors associated with deliberate misreporting and distortions or lack of information. As an alternative, other researchers have used proxies (observable indicators of underlying capability) to ward off the reliability and validity problems of self-reported capability. These proxies could be specific input or output measures of organizational performance captured within the firm. Another approach is to use reports from regulatory bodies, benchmarking associations, industry associations, and standards and certification. Capabilities and resources drive organizational performance and get built through experience (Eggers and Kaplan, 2013). So performance can be regressed directly on experience. Hence while organizational capabilities are primarily identified based on performance, micro-foundational research of organization capabilities also highlights the roles of cognition and action . (Gavetti, 2005; Winter, 2000). (Grant & Verona, 2015) have stated three types of empirical data to identify organizational capabilities - *performance*, *cognition*, and *action*. The present study draws on the same to capture measures of organizational capability from various studies.

2.2 Characteristics Of Self-Directed Learners

As the need for life-long learning gets increasingly important, characteristics believed to be associated with self-direction in learning are being sought in the workforce. Casual learning across the life span is a known phenomenon. However, modern-day needs emphasize self-direction in learning. The literature suggests that there are specific behaviours and abilities associated with self-direction in learning. They include intelligence, independence, confidence, persistence, initiative, creativity, ability to critically evaluate one's self, patience, desire to learn and task orientation. Other behavioural characteristics identified are tolerance of ambiguity, ability to discover new approaches, prior success with independent learning, preference. working alone, knowledge of variety of resources, ability to plan, ability to carry out a plan and others. According to Guglielmino (1977) , the highly self-directed learners are individuals who exhibit initiative, independence and persistence in learning. Furthermore, self-directing learners are capable of accepting responsibility for their own learning. They view problems as challenges rather than obstacles. Self-directed learners possess both curiosity and self-discipline. They are people who combine self-confidence with a strong desire to learn. Finally, they can organize their time, set an appropriate pace for learning, develop a plan for completing work. The present research draws on the same to capture self-directed learner characteristics of employees within organizations from various empirical studies.

2.3 Individual SDL Characteristics and Organizational Capability

According to the People Capability Maturity Model by SEI Institute, the number of individuals in the competency community and the level of knowledge , skills and process ability that each of them possess is aggregated to measure the Organizational capability in that particular workforce competency. The model further emphasizes that in order to continuously improve its capability, an organization must empower the employees to take onus and continuously improve their individual capability for performing their work. Individuals must characterize and continuously improve their personal work processes (Bill Curtis & Sally Miller, 2005). These principles apply as much to the organization's intangible capabilities, as it does to its core technical competence [6]. Existing studies provide evidence of a positive association between SDL characteristics in employees and organizational capability.

Hence, overall, we hypothesise that:

Individual Self-directed learning characteristics have a positive impact on organizational capability

However, it is difficult to demonstrate a causal link on SDL and Organizational capability from the e existing empirical studies as they address relationships of distinct SDL characteristics with different measures of organizational capability. In the present study we draw on meta-analysis techniques to estimate the effect size of this relationship.

III. METHODOLOGY

3.1 Sample

To identify published and unpublished studies that investigate the statistical association between at least one SDL characteristic and one organisational capability measure. We searched for the keywords ‘self directed learning’ and ‘Organizational Capability’. We further refined the search by looking for keyword ‘correlation coefficient’ and employee self-direction in JSTOR library. We then check the references list of each of the identified studies as well as reviews and meta-analysis of the Organizational capability literature. To be included in the analysis, a study had to a) examine the relationship between employee SDL characteristic and organisational capability at organisational level; b) be a quantitative analysis of a panel dataset, and include sufficient statistical information for the calculation of effect sizes (Cappelli & Neumark, 2001). A rejection criteria was established to exclude studies from the meta analysis. Studies that did not measure employee level independent variable, that did not capture Org level dependent variable, studies pertaining to education level population, that used student sample and meta analytic studies were excluded from the analysis. A total of 129 articles were retrieved with the selection criteria. They were sorted by relevance and the top 50 articles were studied in detail. We studied the abstract, conclusion and quantitative analysis done within these 50 articles and excluded based on above mentioned rejection criteria. Finally 25 articles were found to have the requisite quantitative evidence of correlation between SDL characteristic and organizational capability measure. A total of 4400 organizations have been examined in these 25 studies. (see Table 2). Table 1 captures the details of the 25 studies that have been used for this meta analysis.

Table - 1 Studies used in the meta-analysis.

Study	Name of the Journal	Sample Size	SDL Characteristic	Organizational Capability	Effect
(Annelius etal, 2011)	Journal of Organizational Behavior, Vol. 32, No. 2, Contemporary Empirical Advancement in the Study of Aging in the Workplace (FEBRUARY 2011), pp. 226-247	238	Training & Development Willingness (Willingness to learn)	Perceived Supervisory Support	0.41
(Sun Young etal, 2013)	Journal of Organizational Behavior, Vol. 35, No. 3 (April 2014), pp. 393-412	260	Organizational Learning Practices (eg. sharing ideas, mentoring, knowledge sharing by employees)	Innovative Performance	0.13

(Tsuyoshi et al, 2010)	Academy of Management Perspectives, Vol. 24, No. 4 (November 2010), pp. 25-37	870	Empowerment (freedom/independence)	Organizational dead weight (Capability of Flexibility)	0.31
(Rodolph, 2003)	Strategic Management Journal, Vol. 24, No. 9 (Sep., 2003), pp. 821-838	785	Related employee education investment(commitment to learn)	Ease of forecast	0.31
(Elisa et al, 2015)	Journal of Business Ethics, Vol. 128, No. 1 (April 2015), pp. 167-181	170	Shared Vision(everyone influences the way to work and the objectives of the firm/initiative)	Financial Performance	0.37
(Guang Ping, 2012)	The Journal of Personal Selling and Sales Management, Vol. 32, No. 2 (Spring 2012), pp. 225-243	301	Problem Solving of Sales Person(creativity)	Customer satisfaction	0.6
(Brian et al, 1997)	Journal of Management Information Systems, Vol. 14, No. 1 (Summer, 1997), pp. 41-68	231	People Related Autonomy(independence)	Group Process(Learning capacity of organization)	0.3
(Ravichandran et al, 2000)	MIS Quarterly, Vol. 24, No. 3 (Sep., 2000), pp. 381-415	123	Stakeholder Participation(initiative)	Process Efficiency	0.27
(Ulrich et al, 2010)	Organization Science, Vol. 21, No. 5 (September-October 2010), pp. 1054-1071	152	Employee Attitude(initiative)	Dynamic capability(external knowledge exploitation)	0.62
(Yang Cheng et al, 2015)	Journal of Business Ethics, Vol. 127, No. 2 (March 2015), pp. 479-500	134	Employee's environmental involvement(ownership)	Environmental performance	0.26
(Sophia et al, 2013)	Organization Science, Vol. 24, No. 4 (July-August 2013), pp. 1257-1276	249	Helping Behaviour(initiative)	Leadership Emergence	0.31
(Richard, 2014)	Small Business Economics, Vol. 42, No. 1, Special Issue: INBAM 2012	307	Entrepreneurial orientation(Ownership)	Routinized Dynamic capability	0.16

	(January 2014), pp. 33-57				
(Scott et al, 2004)	The Academy of Management Journal, Vol. 47, No. 3 (Jun., 2004), pp. 332- 349	285	psychological empowerment(independence)	empowerment climate	0.47
(Robert et al, 2010)	Journal of Business Ethics, Vol. 93, No. 3 (May 2010), pp. 373-391	162	Organic Renewal (employee behave self-directed/initiative)	Organizational Capital	0.4
(Charles et al, 2010)	The Journal of Personal Selling and Sales Management, Vol. 30, No. 4 (Fall 2010), pp. 299-317	345	Transformational Leadership (intellectual stimulation)/Creativity	Supervisory Capability	0.59
(Karynne et al, 2012)	Strategic Management Journal, Vol. 33, No. 6, Strategy and the Design of Organizational Architecture (June 2012), pp. 661-680	132	Individual Information interpretation(intelligence)	Organizational Informational Processing	0.3
(Sushil et al, 2012)	The Academy of Management Journal, Vol. 55, No. 5 (October 2012), pp. 1146- 1168	323	Feedback Seeking(initiative)	Newcomer positive affect	0.52
(Ravichandram etal, 2000)	Journal of Management Information Systems, Vol. 16, No. 3 (Winter, 1999/2000), pp. 119-155	123	Empowerment (freedom of programmer/analysts)/independence	Process maturity	0.992
(Isabella,2014)	The Accounting Review, Vol. 89, No. 5 (SEPTEMBER 2014), pp. 1729- 1750	457	Creativity of employees	Capability to deal with task uncertainty	0.186
(Anil Menon etal,1999)	Journal of Marketing, Vol. 63, No. 2 (Apr., 1999), pp. 18-40	212	Resource Commitment(ownership)	Market Performance	0.27

(Zen Zhu et al, 2007)	Journal of Marketing Theory and Practice, Vol. 15, No. 3 (Summer, 2007), pp. 187-203	189	IT Capability(ICT)	Customer Orientation	0.25
(Leane Chung, 2014)	MIR: Management International Review, Vol. 54, No. 2 (2014), pp. 225-252	503	Trust in delegated staff(independence)	Reverse transfer	0.2
(JAMES ETAL, 1993)	The Academy of Management Journal, Vol. 36, No. 2 (Apr., 1993), pp. 239-270	156	Information scanning(ownership)	Product or service change	0.2
(Mirosava etal, 2016)	Journal of East European Management Studies, Vol. 21, No. 1 (2016), pp. 35-59	125	Acceptance of plurality of ideas (cognitive agility)	Org Change readiness	0.41

3.2 Meta-Analysis Technique

Hunter and Schmidt (2004) suggest that meta-analysis statistically aggregates findings to establish whether a relationship exists and if so, estimate its size (see discussions by Field, 2005a, 2005b; Field & Wright, 2006). Effect size estimates are calculated as the mean of the sample size weighted correlation (r) from primary studies. Because the study is the unit of analysis in meta analysis (Hunter & Schmidt, 1990), if a study reports correlations among the multiple measures of SDL characteristics and different indicators of organisational capability, the within-study correlations are averaged to yield a single estimate for the study (Hunter & Schmidt, 2004). Measurement error has the next largest impact on effect sizes, after sampling error. Unfortunately, not all of the studies report reliability coefficients (especially for dependent variable), which makes it impossible to correct each study individually for measurement error. We have therefore calculated sampling effect size variance, population effect size variance and credibility intervals to measure the reliability of the meta-analysis findings.

IV. RESULTS & DISCUSSION

Table 2 presents the meta-analysis results. Our hypothesis predicts that SDL characteristics among employees have a positive on organizational capability. As shown in Table 2 the this hypothesis is supported with $r=0.34$. This weighted effect size is based on 25 studies undertaken across 4400 organizations. The average sample size of studies is 285. The sampling error

variance is very low at 0.0014 which indicates that within study errors are minimal. The sampling effect size variance is 0.0257 and the population effect size variance is 0.0243. Both of which indicate within study and across study variance being extremely low. This further emphasizes the validity of the hypothesis. The lower credibility interval is 0.04 and the upper credibility interval is 0.65, thus confirming a positive correlation between SDL characteristics and organizational capability.

Table -2 Meta-analysis results

Total Number of Studies – 25						
Total Number of Organizations – 4400						
Weighted Mean Effect	Average Sample Size	Sampling error Variance	Sampling effect size variance	Population effect size variance	Credibility Interval Lower	Credibility Interval Upper
0.34	285	0.0014	0.0257	0.0243	0.04	0.65

Thus, investigating how firms can build a culture for self-directed learning in order to preserve and continuously improve their capability to sustain competitive advantage and long-term success is a potentially fruitful avenue for future research.

V. CONCLUSION, IMPLICATIONS AND LIMITATIONS

Evidence supports a positive relationship between SDL characteristics and organizational capability. Using meta-analysis to reduce the impact of sampling and measurement error, our findings provides support to the assertion that SDL characteristics positively affect organizational capability. We estimate that firm capability can be enhanced and improved by 0.34 of a standardised unit for each unit increase in the adoption of SDL, in particular, in a formation of a set of combined and mutually reinforcing SDL practices. SDL characteristics change with age in particular and we observed that while some studies (among those we have used for this meta analysis) have examined this aspect in their sample, some have not. Studying the impact of age and other demographic variables on this relationship between SDL and organizational capability is scope for future studies.

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