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Dynamic managerial capabilities: lessons from non-profits in highly dynamic environments

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Purpose. Drawing on the concept of dynamic managerial capabilities, to propose a model that incorporates managerial human and social capital, and managerial cognition in the dynamic capabilities framework.

Design/Method/Approach. The study is an empirical in the context of the current conflict in the eastern Ukraine and is an analysis a non-profit field with an extremely high dynamic environment. The data was collected using a quantitative survey with 70 private corps, non-commissioned officers, and higher-ranked officers.

Findings. The model provides a direct relationship between dynamic capabilities and dynamic managerial capabilities, whereby the latter is constituted by the perceived manager's competence (manager's human capital), manager's team (manager's social capital), and manager's goal congruence towards the goals of the organization (managerial cognition).

Theoretical implications. This paper expanded the body of research on dynamic managerial capabilities by developing the following arguments: (1) dynamic managerial capabilities directly influence organizational dynamic capabilities; (2) managerial social capital mediates relationships between managerial human capital and organizational dynamic capabilities; (3) managerial social capital mediates relationships between managerial cognition and organizational dynamic capabilities.

Originality/value. This research not only shows how a non-profit organization can act efficiently, it is also an example of an application of strategic management theory to a practical field with life or death consequences.

Research limitations/Future research. This research opens avenues for future research on dynamic capabilities in non-profit organizations.

Paper type – empirical.

Keywords: dynamic managerial capabilities; military; managerial social capital; managerial human capital; managerial cognition.

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Динамічні здібності менеджерів: уроки неприбуткової організації в умовах високої динаміки

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Мета дослідження. Базуючись на концепції динамічних здібностей менеджерів, запропонувати модель, яка інтегрує людський і соціальний капітал менеджерів, а також свідомість менеджерів в загальну схему динамічних здібностей.

Дизайн/Метод/Підхід дослідження. Дане дослідження – емпіричне в контексті поточної кризи на Сході України, проведено шляхом аналізу діяльності неприбуткової організації в умовах екстремальної динаміки навколишнього середовища. Дані зібрані з використанням анкетування 70 рядових, сержантів і офіцерів з подальшим кількісним аналізом даних.

Результати. За допомогою запропонованої моделі протестовано пряме взаємовідношення між організаційними динамічними здібностями і динамічними здібностями менеджерів. Останні були представлені прийнятною компетенцією керівника (людський капітал менеджера), командою керівника (соціальний капітал менеджера) і узгодженістю цілей керівника з цілями організації (свідомість менеджера).

Теоретичне значення дослідження – розширено наукову дискусію про динамічні здібності менеджерів шляхом розвитку таких аргументів: (1) динамічні здібності менеджерів безпосередньо впливають на динамічні здібності організації; (2) соціальний капітал менеджерів є медіатором у взаєминах між людським капіталом менеджерів і організаційними динамічними здібностями; (3) соціальний капітал менеджерів є медіатором між свідомістю менеджерів і організаційними динамічними здібностями.

Оригінальність/цінність Наукова новизна дослідження. В цьому дослідженні показано не тільки можливості неприбуткової організації діяти ефективно, але і приклад застосування теорії стратегічного менеджменту в практичній сфері, де наслідком прийняття рішень є життя або смерть.

Перспективи подальших досліджень. Цією роботою відкрито шлях до подальших досліджень в галузі динамічних здібностей у неприбуткових організацій.

Тип статті – емпірична.

Ключові слова: динамічні здібності менеджерів; військова справа; соціальний капітал менеджерів; людський капітал менеджерів; свідомість менеджерів.

Подяка

Я хочу подякувати Євгенові Богодістову, з яким ми почали робити це дослідження, за його терпіння і корисні поради. Я також хочу висловити свою вдячність Флоріанові Досту за те, що він приєднався до нашої команди і цього проекту і привніс нові ідеї зі своєї сфери досліджень.

Динамические способности менеджеров: уроки неприбыльной организации в условиях высокой динамики

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Цель исследования. Базируясь на концепции динамических способностей менеджеров, предложить модель, интегрирующую человеческий и социальный капитал менеджеров, а также сознание менеджеров в общую схему динамических способностей.

Дизайн/Метод/Подход исследования. Данное исследование – эмпирическое в контексте текущего кризиса на Востоке Украины, проведено путем анализа деятельности неприбыльной организации в условиях экстремальной динамики окружающей среды. Данные собраны с использованием анкетирования 70 рядовых, сержантов и офицеров с последующим количественным анализом данных.

Результаты. С помощью предложенной модели протестировано прямое взаимоотношение между организационными динамическими способностями и динамическими способностями менеджеров. Последние были представлены воспринимаемой компетенцией руководителя (человеческий капитал менеджера), командой руководителя (социальный капитал менеджера) и согласованностью целей руководителя с целями организации (сознание менеджера).

Теоретическое значение исследования – расширена научная дискуссия о динамических способностях менеджеров путем развития следующих аргументов: (1) динамические способности менеджеров напрямую влияют на динамические способности организации; (2) социальный капитал менеджеров является медиатором во взаимоотношениях между человеческим капиталом менеджеров и организационными динамическими способностями; (3) социальный капитал менеджеров является медиатором между сознанием менеджеров и организационными динамическими способностями.

Оригинальность/Ценность/Научная новизна исследования. В данном исследовании показаны не только возможности для неприбыльной организации действовать эффективно, но и пример применения теории стратегического менеджмента в практической сфере, где следствием принятия решений являются жизнь или смерть.

Перспективы дальнейших исследований. Этой работой открыта возможность дальнейших исследований в области динамических способностей для неприбыльных организаций.

Тип статьи – эмпирическая.

Ключевые слова: динамические способности менеджеров; военное дело; социальный капитал менеджеров; человеческий капитал менеджеров; сознание менеджеров.

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Introduction

Dynamism is one of the key factors for the dynamic capability (Eisenhardt, & Martin, 2000). Since dynamism plays a crucial role for dynamic capabilities, I investigated dynamic managerial capabilities in a domain in which dynamism is present by default, i.e. during warfare. In this paper I focus on non-profit organizations. Up to now, only few papers discuss the role of dynamic capabilities in the non-profit domain (Piening, 2013). In this relatively small field of research, the focus is mainly set on dynamic capabilities as an organizational construct, since it is hypothesized that managers may play a smaller role in non-profit than in for-profit organizations due to the larger role of institutions such as bureaucracy (Boyne, 2002, p.116). However, a certain type of organization exists where managers, though being called by a different name, play an even larger role than in firms. If one looks at organizations like Médecins Sans Frontières (“Doctors without Borders”) or military forces, one may notice the very important role doctors or military officers play. In this work, I therefore investigate dynamic managerial capabilities and their interplay in military units which are actively engaged in the warfare in the eastern Ukraine.

Research Question

The research question of this paper is, this, “*In how much dynamic managerial capabilities in non-profit organizations impact the organizational dynamic capability?*”

Theoretical Background

Since the introduction of the concept of “dynamic capabilities” by Teece and Pisano (1994), research in dynamic capabilities has developed into different directions. Whereas Winter (2003) investigated the routinized nature of dynamic capabilities, other researchers focused on the role of managers or decision-makers in dynamic capabilities of firms (e.g. Adner, & Helfat, 2003; Sirmon, & Hitt, 2009; Helfat, & Peteraf, 2015).

Dynamic managerial capabilities were first introduced by Adner and Helfat in 2003 in order to underpin corporate level managerial decisions. They proposed to root dynamic managerial capabilities in three underlying factors: Managerial human capital, managerial social capital, and managerial cognition, whereby these factors influence strategic and operational decisions of managers “separately and in combination” (Adner & Helfat, 2003, p.1013). Concerning managerial human capital, scholars refer to learned skills, managerial social capital relates to social relationships conferring influence, control, and power, and, finally, managerial beliefs include mental models. In their recent work, Helfat, & Peteraf (2015) discuss the underlying managerial cognitive capabilities or certain psychological concepts which on the one hand tackle the three factors mentioned above, and, on the other hand, incorporate the concept of dynamic managerial capabilities into the framework of Teece (2007). Scholars propose the notion of managerial sensing, seizing, and reconfiguring (or orchestrating) capacities as underlying factors for dynamic managerial capabilities.

Although the discussed concepts are meant for use in for-profit organizations, the same concept should be transferable to non-profit organizations (Boyne, 2002). Moreover, some non-profit organizations have to act in environments where dynamism has a considerable pace. If one thinks of regions with epidemics, radioactive contamination, or armed conflicts, one might see not only the importance of the concept of dynamic (managerial) capability, but also the lessons which can and should be learned by business in less dynamic domains.

In this research, I concentrated on military units, in particular on soldiers and military officers who at the moment of data collection were actively engaged in military operations in the eastern Ukraine¹. As the field of management research is rooted in military traditions and terminology (Talbot, 2003) and current military organization research encompasses modern sociological and management theory (Segal, & Segal, 1983), I propose that an investigation of dynamic capabilities in such domains can offer new insights into dynamic capabilities research and the field of strategic management field in general. The underlying research questions of this paper are: What are the interrelations among managerial human capital, managerial social capital, and managerial cognition; and how do each of these factors and their combination impact dynamic capabilities of military units?

Theoretical Model

In contrast to Adner, & Helfat (2003), who proposed an indirect link to dynamic capabilities via managerial decision, I propose a direct link. Some factors of dynamic managerial capabilities should directly influence the formation of the dynamic capability of the organization. For example, since organizational dynamic capability is a routine (Winter, 2003) or has a routinized nature (Felin, & Foss, 2009), a team constellation might play a crucial role in its formation. A team, being formed and lead by a manager, represents a part of managerial social capital (Reagans, Zuckerman, & McEvily, 2003; Newell, Tansley, & Huang, 2004). Based on the embedding theorem of Takens (Takens, 1981; Dost, 2015), which states that each variable of a system inherits and contains information of other system variables, this paper argues that a team, formed and lead by a manager, inherits a considerable part of managerial social capital - managerial access to information and people via personal networks (Kor, & Mesko, 2012). Therefore:

Hypothesis 1. Managerial social capital has a positive influence on dynamic capabilities of the organization.

Concerning managerial human capital, I support the notion of a direct influence on organizational dynamic capabilities. Since managerial skills and knowledge influence managerial decision-making (Adner, & Helfat, 2003) and managerial decisions are a part of the seizing capacity (Teece, 2007), I assume a positive influence of managerial human capital on organizational dynamic capabilities. Moreover, I assume that the manager’s competence is a good representative for managerial human capital, since, via the evaluation of managerial competence skills, education and experience play a major role (Adner, & Helfat, 2003). Therefore:

Hypothesis 2a. Managerial human capital has a positive impact on organizational dynamic capability.

Following Teece (2007) and Barreto (2009), managerial decisions are a part of the seizing capacity, or a propensity to make timely and market-oriented decisions which are formed not only from managerial decisions, but also from decisions made by personnel involved in according routines (Tierney & Farmer, 2002; Webster, 2004). Winter (2003) defines a capability as a set of decision options conferred upon management, assuming, first, that decisions are made by “management” and not only one manager and, second, that other routines produce certain decision options. A manager, consequently, is able to influence dynamic capabilities of their team, i.e. a competent manager may form a good team and this team may influence the organizational dynamic capabilities in a routinized way. Therefore:

Hypothesis 2b. The impact of managerial human capital on organizational dynamic capability is mediated by their team.

¹ In this paper, I use the internationally common terms for the conflict, e.g. *The Economist* (2015). In the questionnaire supplied to soldiers, the terms commonly used in Ukrainian media were applied.

Finally, I assume that managerial beliefs are both directly and indirectly (via a mediator) connected to organizational dynamic capabilities. Managerial beliefs and mental models may restrict or form dynamic capabilities, since a manager can confirm or reject any process or routine, similar to “dominant logic” as discussed by Kor, & Mesko (2012). Dynamic capabilities assume new processes and actions upon zero-level routines (Winter, 2003) and these processes and actions may be blocked or, vice versa, proposed by a manager (Bogodistov, 2015). If a manager sees an incongruence of the proposed solution, they might apply a kind of a “right of veto”. Therefore:

Hypothesis 3a. Managerial cognition positively impacts the organizational dynamic capability.

Managers, as argued above, form teams and teams, as hypothesized earlier, might have a positive influence on dynamic capabilities of an organization. The congruence of managerial beliefs with beliefs of the organization may strengthen teams (e.g. Kor, & Mesko, 2012), which in turn increases organizational dynamic capabilities. Teams are, thus, a mediator in this relationship. Therefore:

Hypothesis 3b. The impact of managerial cognition on organizational dynamic capability is mediated by their team.

The hypotheses are depicted in Fig. 1.

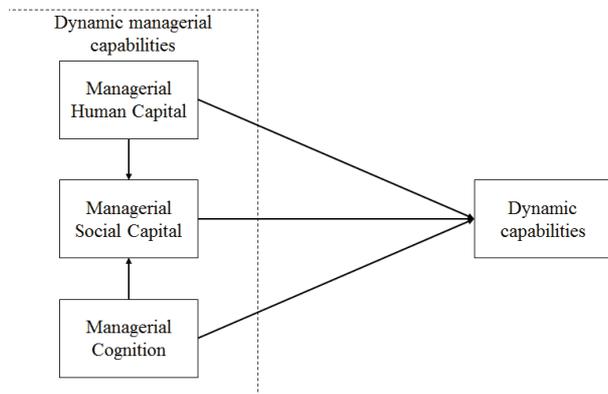


Fig. 1. Theoretical model of investigated relationships

As our current organizational forms are inherited from the military (Talbot, 2003), military units should be a key field of study in order to investigate complex organizational phenomena. Whereas some researchers try to transfer dynamic capabilities research from the strategic management field to the non-profit domain (for a review, see Piening, 2013), I claim that the opposite approach is also necessary.

Methodology

The data collection is part of a larger study and was conducted in the fall of 2015 in the eastern Ukraine. Due to the severe restrictions in this environment and concerns by Ukrainian intelligence and based on preliminary agreements with volunteers, about 100 questionnaires were printed and forwarded via civilian volunteers to soldiers and military officers either in the area of operation (AO) or to the place of their rotation, leading to a response rate of approximately 70%.

The questionnaire included dynamic capabilities (Li, & Liu, 2014) as a dependent variable and social capital, human capital and managerial cognition as an independent variable, which was assessed with NATO’s CTEF 2.0 instrument (Essens, et al., 2010) in order to test characteristics of the group of people the participant works with directly. There were no issues with reliability or validity of these scales.

Since using questionnaires alone is susceptible to common method bias, a common latent factor test with a Harman’s single factor test was performed (Podsakoff, & Organ, 1986). All items in this study which use Likert-scales united as one factor explained 61.78% of variance. This result indicates a common method bias problem which should be considered in the data interpretation. I would like to stress that the specific setting of the sample and the sample size could have negatively influenced this result as well. As the data for this particular study was collected together with data for a study on relational models in military units, and since all of this data was collected with the same questionnaire, it was possible to make a triangulation in order to define the common method bias. In order to triangulate and exclude errors which could have occurred due to the small amount of items used in this particular paper, other items based on Likert-scales from the whole study were included, i.e. taking into account other parts of the complete questionnaire. If there had been a common method bias issue, it would have impacted other parts of the questionnaire. Therefore, I introduced a common latent factor and a marker variable (Richardson, Simmering, & Sturman, 2009) and added reports of participants on their relational models (equality matching and authority ranking (Haslam, & Fiske, 1999)) and feelings (degree of pleasantness, arousal, and independence (Bradley, & Lang, 1994)). The latter was used as a marker variable, since it is a report on the participants’ state and it should not be theoretically related to the target variables. The variance explained by the common latent factor with the marker variable was about 16.97%, confirming that common method bias should not be an issue across the whole study and therefore likely not for the variables in this paper (Williams, Hartman, & Cavazotte, 2010).

The sample contained one general officer (rank from major to colonel), one company officer (rank from lieutenant to captain), 29 non-commissioned officers (ranks from sergeant to master sergeant), 36 private corps, and 3 participants did not specify their rank. As expected with Ukrainian soldiers, all participants were male. The mean age was 33.14 (SD = 7.61), the mean overall military experience was 25.05 months (SD = 19.71), and the mean time in the AO was 9.21 months (SD = 4.88).

Results

In a linear regression model including all independent and control variables, managerial cognition and managerial social capital have a significant positive influence on organizational dynamic capability (social capital: $B = .460$, $p < .001$; managerial cognition: $B = .932$, $p = .001$). Managerial human capital had no significant direct influence on organizational dynamic capabilities. The adjusted R^2 of the model was .501. Therefore, Hypotheses 1 and 3a were supported and Hypothesis 2a rejected.

The inclusion of social capital as a mediator in relationships between the managerial competence and the organizational dynamic capability decreased the impact of managerial competence by almost 100% and lowered the significance (no mediation: $B = 1.177$, $p < .001$, with mediation: $B = .558$, $p = .030$). The adjusted R^2 was .419; lower confidence interval bound lied at .330, upper confidence interval bound lied at 1.05; $F(4, 65) = 13.438$, $p < .001$. This test supported the mediating role of a manager’s team constellation, thereby confirming Hypothesis 2b.

In order to test mediation effects, I performed the multiple regression mediation analysis as proposed by Preacher, & Hayes (2008). The analysis was done twice - once for managerial cognition and once for managerial human capital as independent variables. For this analysis, organizational dynamic capability was used as a dependent variable; social capital, represented by the manager’s team constellation, was assumed to play a mediating role. The analysis controlled for age and time spent in the area of operation. The method of Preacher and Hayes involves bootstrapping, whereby I set the number of samples to 5,000 and the confidence interval to 95%.

Concerning the relationship between managerial cognition and organizational dynamic capability, managerial social capital also plays a mediating role. The mediation is, however, not as strong as in the previous relationship (no mediation: $B = 1.279$, $p < .001$, with mediation: $B = .841$, $p < .001$). The introduction of the manager's team as a mediator decreases the influence only by about 29%, though the relationship remains significant. The adjusted R^2 is .507; lower confidence interval bound lied at .201, upper confidence interval bound lied at .790; $F(4, 65) = 18.732$, $p < .001$. This test supports the partial mediation by the manager's team constellation, thereby confirming Hypothesis 3b.

In both tests, neither time spent in the AO nor the age of participants played a significant role.

Conclusions and Discussion

Based on these findings, the following conclusions can be drawn. First, I proposed and tested the direct link between dynamic managerial capabilities and organizational dynamic capabilities. It could be shown that managerial social capital and managerial cognition have a direct positive influence on organizational dynamic capability. Managerial human capital showed no statistically significant influence in combination with the other factors underlying dynamic managerial capabilities. This finding shows the importance of incorporation of data on all three factors of dynamic managerial capabilities for dynamic capabilities research. Whereas *Peteraf, & Helfat (2015)* focus on capacities of managerial sensing, seizing, and reconfiguring (or orchestrating), I stress the role of managerial social and human capital, and of managerial cognition to further dynamic managerial capabilities research.

Second, one could argue that the competence of a manager might play a negative role due to a competency trap. As *Levitt, & March (1988, p.321)* argued "(...) a competency trap can occur when favorable performance with an inferior procedure leads an organization to accumulate more experience with it, thus keeping experience with a superior procedure inadequate to make it rewarding to use". Nevertheless, in the mediation tests it could be shown that managerial human capital has a significant effect on organizational dynamic capabilities. This effect, however, becomes less significant by the inclusion of a mediator and non-significant by the inclusion of main effects of all three underlying factors of dynamic managerial capability. Therefore, I conclude that all three factors should be considered in further research. Moreover, I would like to stress the importance of further investigation of managerial social capital as a mediator for dynamic managerial capabilities research.

Finally, I was able to apply the concept of dynamic managerial capabilities and all its constituting factors in the non-profit domain. The studies in the non-profit domain usually use the concept of dynamic capabilities (*Piening, 2013*), suppressing the meaning of a manager and stressing the role of bureaucratic mechanisms (*Boyne, 2002*). There are, however, non-profit organizations in which the role of a manager is not to be underestimated. With the example of military units it could be shown that the competence of the managers (commanders) and their congruence with organizational goals directly impact dynamic capabilities of the unit. This finding could be applicable for other organizations in the non-profit domain where a manager (leader, doctor, and so forth) plays a big role. Therefore, I stress the importance of research of the concept of dynamic managerial capabilities in such organizations in the non-profit domain.

Theoretical Implications

Whereas some researchers try to transfer knowledge from the strategic management field to the non-profit domain (for a review, see *Piening, 2013*), I claim that the opposite approach is also necessary. There is still little research done in the field of dynamic capabilities and non-profit organizations, while non-

profit organizations may be the locus of highest dynamics. Since dynamism is needed for dynamic capabilities, non-profit organizations like military units or other organizations working in uncertain, dangerous conditions are the most obvious research target. This research is an example of investigating dynamic capabilities in regimes of highest uncertainty, where "losses" mean human lives.

Furthermore, this research shows the mediated interplay between factors of dynamic managerial capabilities and proposed the direct link between dynamic managerial capabilities and organizational dynamic capabilities.

Practical Implications

Though the sample comes from the military domain, I argue that these findings are applicable to other non-profit organizations working in highly dynamic environments. I also assume that the results could be generalizable to the for-profit domain, but only further replication studies in the for-profit domain can support this argument. Consequently, the implications at present only hold for the non-profit domain.

First, a manager's team and a manager's congruence with their organizational goal need to be developed in order to increase dynamic capabilities of a unit. Non-profit organizations need to focus on these two aspects if they want to be flexible and able to survive in dynamic environments.

Second, social capital which was represented in this study by the manager's team constellation, is a mediator for goal congruence and managerial competence. Having a competent commander (manager) in the war zone (dynamic environment) is not a sufficient condition to expect the unit to possess and employ dynamic capabilities. If a manager (doctor, commander, etc.) develops a well-functioning team, the manager's competence may play a large role for the dynamic capability of their team, unit, or organization.

Third, it is very important that the manager (doctor, commander, etc.) shares the goals of the whole organization. As this study has shown, units of those commanders who have a high goal congruence have higher dynamic capabilities and better team constellations, which, in turn, increases dynamic capabilities. Therefore, organizations, be it the ministry of defense or an NGO, need to spend more attention to the goals their leaders share with the organization.

Limitations and Further Research

This study has a number of limitations. First, only a small sample of the population could be accessed. This is due to the difficulty of reaching the population and barriers to access data without breaking rules of national security. Since the goal was to test dynamic capabilities in environments with the highest dynamics, the necessity of further research in similar domains needs to be stressed. Researchers with access to larger samples in similar fields such as *Médecins Sans Frontières* or the *UNHCR* could support the theory and provide more insight to the complex and abstract concept of dynamic managerial capabilities.

I am also aware that I was forced to use single item scales for complex concepts of managerial cognition and managerial human capital. I stress the need for further research using more elaborate scales, which would increase the reliability of research and validity of findings. In this paper, the concepts of managerial human and social capital, and managerial cognition were simplified. A manager's team constellation, competence, and congruence towards organizational goals are good representative concepts for the three factors of dynamic managerial capabilities. Nevertheless, these underlying factors of dynamic managerial capabilities are not restricted by these concepts. I therefore stress not only the need for an application of multi-item measurements for the concepts mentioned above, but also for the inclusion of

other important underlying concepts into dynamic managerial capabilities research, such as external networks for managerial social capital, specific skills, and experience for managerial human capital, and mental models and beliefs for managerial cognition (Helfat, & Peteraf, 2015).

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