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On Behalf of Digital Innovation: A Replication Study on International and National Executive Search Consultancy Firms

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Abstract:

Disruptive innovation (DI) provides an explanation for firms' success and failure in the business economy. Building on Karimi and Walter (2015), whose study ascertains dynamic capabilities (DC) in responding to digital platforms and firm performance, this study extends their model by examining the effect of relational capabilities as DC in international and national executive search consultancies (CERS) based in Brazil. CERS have been fundamentally changing their traditional operating business models because of digital platforms. Thus, a survey questionnaire from 141 CERS executives measured the impact of DC on CERS performance and digital platforms. The findings highlight that DC is positively associated with digital platform capacity and CERS performance, as Karimi and Walter (2015) also highlighted. We believe that the findings impact practitioners because this study is original in the context of CERS and valuable for new business model formation, showing that DCs are relevant in any dynamic business scenario. Theoretically, this study enhances DC and DI theories, confirming that digital platform capabilities are a powerful strategic choice to reinvent core business functions and accelerate innovativeness.

Keywords: Dynamic Capabilities, Disruptive Innovation, Executive Search, Digital Platforms.

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1 Replication Benefits

In this study, we present a replication of Karimi and Walter (2015) gathering data from international and national executive search consultancies (CERS) based in Brazil. It is a methodological replication, as we use the same methods as Karimi and Walter (2015) to analyze dynamic capabilities (DC) in responding to digital platform capacity and firm performance. This replication conducted in different locations and industries (i.e., the United States versus Brazil and the newspaper industry versus an executive search) shows the crucial role of DC in digital innovation (DI). According to some authors (Ho et al., 2021; Im & Straub, 2015), methodological replications conducted in different locations or countries are relevant to the generalizability of the theories. This is the first benefit of this replication.

The second benefit is related to the executive search business model. Executive search is a strategic service for firms interested in hiring information technology professionals who are protagonists in the IT industry or any digital ecosystem. Therefore, understanding how DC impacts innovation and performance in CERS offers an opportunity to emphasize the relevance of building digital platforms for other industries. Additionally, traditional CERS had their dynamics changed on what was previously restricted to consultants' knowledge and contacts (Tienari et al., 2013), and now it is a mere convergence of digital information open to the public. In addition, we bring attention to the future of CERS to maintain competitiveness considering that the internalization of CERS professionals (headhunters) by traditional clients has also transformed this scenario, adding more challenges.

The third benefit is extending the concept of DC, bringing attention to relational capabilities and their effects in sustaining and developing digital platform capacity and transforming CERS's business model. Bringing innovativeness and performance in terms of revenues and the number of executive search services offered, DC presented a positive impact on both innovation and performance, revealing similar results to those shown by Karimi and Walter (2015). Relational capabilities also have a positive impact on the DC construct.

Examining these interconnected elements by replication reinforces that building digital platform capacity, business model innovation, and new digital strategies through DC may offer broader visibility to decision makers to manage and reconfigure their resources toward DC and DI development. This study also makes a theoretical contribution to DC and DI theories and has practical implications for examining the microfoundations of DC and revealing how DC supports firms' resource reconfiguration to respond to innovativeness.

2 Theoretical Model Replication

Karimi and Walter (2015) used hypotheses designed by the literature on DC to develop their model to build digital platform capacity in response to DI. They collected data from the newspaper industry presenting a model of DC in the second-order (resources, processes, and values) and determining elements of the first-order as a set of financial resources, human resources, senior management support, autonomous growth group, staged allocation of resources, innovative culture, common language, and multimedia mindset. These elements' articulation might result in various degrees of innovation and dynamism, manifesting themselves in diverse environments and in different ways (Helfat et al., 2009) to convey competitive advantage and dynamic growth in changing environments (Teece, 2007).

However, we identified a theoretical gap in the first-order dynamic capacity model of Karimi and Walter (2015) in its dimensions—resources, processes, and values—where relational capacity, well-founded by Helfat et al. (2009), was not evidenced, integrated, and evaluated. Therefore, a new second-order DC, relational capabilities, was added to the model and represented by two first-order constructs called alliances and partnerships and relationship management. In doing so, the relational capabilities dimension applied was based on Jarratt (2008) and Sminorva et al. (2018) as a reference for its robustness and methodological support to expand the DC view (Jarratt, 2008; Smirnova et al., 2018). The research model (Jarratt, 2008; Karimi & Walter, 2015; Smirnova et al., 2018) is depicted in Figure 1.

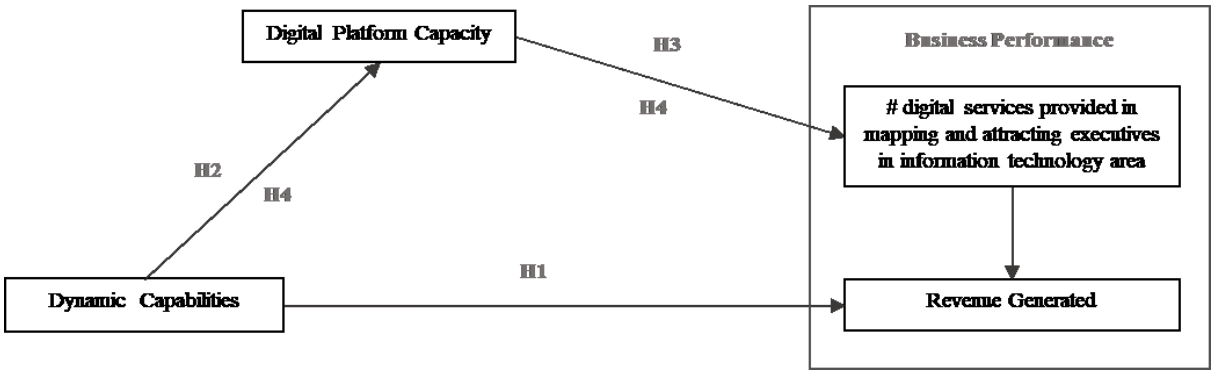

Figure 1. Research Model (Source: Karimi & Walter, 2015)

Table 1 presents a summary of prior literature on determinants of first-order DC for responding to DI in the context of the executive search industry adapted from the original study. Particular attention is given to differentiating relational capabilities in the model considering that dedicated human resources are already allocated to the core services of CERS and can sharply limit the CERS's ability to innovate or to capture new business models. Here, resources are intangible in nature and must be built and cultivated over time (Barney, 1991; Christensen, 1997; Karimi & Walter, 2015). Relational capabilities, on the other hand, involve cooperative relationship skills between two or more firms designed to achieve a shared strategic goal (Helfat et al., 2009). This definition excludes contractual relationships that have an intended impact on the competitive advantage of the companies involved through the shared strategic objective. The creation of relational capacity is an intentional process that is more likely to succeed if specific structural decisions are made in the firm and if there is support for resource creation in senior management (Boynton et al., 1994; Earl & Feeny, 1994; Havelka & Lee, 2002; Helfat et al., 2009). It has led some authors to characterize the importance of relationship management as "learning races", where an effective protection against the leakage of critical assets such as knowledge is to manage problems or failures in the race for technological learning with digital partners (Jarratt, 2008; Smirnova et al., 2018).

Table 1. Determinants of First-Order Dynamic Capabilities

First-order	Dimensions	Descriptions	References
Resources	Dedicated financial resources	Financial resources devoted to digital innovation to facilitate growth, avoid pitfalls associated with allocating resources to the firm's core services, and remove obstacles that could limit the success of innovative ideas.	(Anthony & Gilbert, 2006; Barney, 1991; Christensen & Raynor, 2013)
	Dedicated human resources	Relying on human resources already allocated to the firm's core services can limit the ability to develop noncore services and capture new opportunities and business models.	(Barney, 1991; Christensen & Raynor, 2013; Sterling, 2008)
	Senior management support	It is a sign of the importance of innovation to clearly identify inevitable hurdles and utilize the wisdom of senior managers to improve ideas for the innovative project teams.	(Boynton et al., 1994; Earl & Feeny, 1994; Havelka & Lee, 2002)
Processes	Autonomous group	Having autonomous groups that do not only represent the interests of their departments or interest groups is essential for creating new processes and paths for innovation.	(Anthony et al., 2007; Anthony & Gilbert, 2006)
	Resource allocation coordination	There must be the ability to encourage innovation teams to find more cost-effective ways to intelligently test and mitigate risks with innovative experiences.	(Gilbert & Borrell, 2002; Govindarajan & Kopalle, 2006)
Values	Innovative culture	It defines the barriers that firms may or may not establish new innovation. It is able to stimulate innovative behavior among the actors and guide the firm to accept innovation as one of the basic values, thus being widely engaged.	(Jassawalla & Sashittal, 2002; Khazanchi et al., 2007; O'Reilly & Tushman, 2008)

Table 1. Determinants of First-Order Dynamic Capabilities

	Common language	It can facilitate change and overcome some of the barriers that make innovation difficult, as well as create a shared perspective of dramatically changing the path thought by the organization, strengthening its ability to develop new ideas.	(Anthony et al., 2007; Higgins & McAllaster, 2002; Prokesch, 2009)
	Multimedia mindset	The multiplatform vision must be institutionalized in the organization, permeating all its aspects and its overall mission.	(Jamrog et al., 2006; Lahiri et al., 2008; Tollin, 2008)
Relational Capabilities	Alliances and Partnerships	Search for new alliances and partnerships, always analyzing previous experiences and best practices for digitalization.	(Helfat et al., 2009)
	Relational Management	Ability to handle unsuccessful and problematic business relationships with previous digital partners.	(Jarratt, 2008; Smirnova et al., 2018)

Digital platform capacity is seen as a manifestation of DI as well as artifacts or processes that generate the dissolution of traditional industry conditions, reorganizing products and services to capture new business values (Karimi & Walter, 2015; Pavlou & El Sawy, 2010). Digital platforms may foster networks, generate scale effects, and give consumers the choice of “where” and “when” to consume. However, social media, data analysis, mobile and cloud computing create enormous challenges for traditional firms (Karimi & Walter, 2016), such as CERS, which seeks to distribute their services through digital technologies (Xiao et al., 2019). This strategic action to enhance performance and expand opportunities for new digital services is driven by alliances (Helfat et al., 2009) in different ecosystems to support their digital transformation and business development. Thus, digital platform capacity in the model is measured by platforms to connect with professionals who are interested in looking for a new job and platforms to connect with companies that are interested in finding new professionals for their hiring process.

2.1 Hypothesis Adaptation

The hypotheses designed by Karimi and Walter’s (2015) model considered the dynamism related to DI, resource complementation as a system of pro-innovation, values, organizational processes (Eisenhardt & Martin, 2000), orchestration of assets (Teece, 2010), and skills (Markides, 2006) as an evolutionary of existing capacities (Helfat et al., 2009) to manage digital platform capacity. Adapting hypothesis 1, we also highlight the complementarity of resources, processes, and value-adding relationships as crucial capabilities in digital ecosystems to provide knowledge sharing to generate conditions to conduct digital innovation (Helfat et al., 2009; Si & Chen, 2020). Digital innovations require relational ecosystems to support digital technology development (Skog et al., 2018) and better firm performance (Teece, 2010). In combination, DC multidimensionality (resources, process, values, and relationships) contributes to wealth capture and creation (Teece et al., 1997). In other words, a firm's performance must persist over time in the presence of DCs.

In the CERS context, executive search service is a practice of social effort, that is, consultants coordinating activities with the main decision-makers of a firm. In addition, they confidentially mediate with people at different hierarchical and social levels who are concerned about their careers and interested in valuing their reputation. In short, CERS intrinsically have in their business the ability to ensure correspondence between the client and another interested party (Finlay & Coverdill, 2000). Therefore, discretion and secrecy are expected from all parties involved where CERS prove their professionalism, ensuring confidentiality throughout the recruitment process (Tienari et al., 2013).

The main goal of CERS is to provide networks of highly specialized professionals, geographically dispersed, and with added value of knowledge. They live and die by their reputation and ability to manage change (Faulconbridge et al., 2009; Finlay & Coverdill, 2000). With the advent of digitalization, new free access to digital employment platforms created a new reality for CERS, undermining their traditional pillars (trust and reputation). The democratization of talented executive information available on public networks (social media and professional websites) forces CERS to develop digital strategies in searching for competitive advantage.

Therefore, measuring the number of online services offered by CERS not only demonstrates its ability to innovate but also its pursuit of financial performance (revenue generation). In this vein, obtaining and using digital platforms to offer executive search services has become the main condition for strategic

business alignment to maintain competitiveness and survival in this business sector. Thus, the application of dynamic capabilities has a highly strategic value in this process and therefore is the object of this study.

The multidimensionality of DC is crucial to creating digital platform capacity that may also enhance wealth creation and change relations due to its natural condition of generating a scale effect and giving clients the choice of where and when to consume an executive search service. Social media, data analysis, and mobile and cloud computing create enormous challenges for traditional firms (Karimi & Walter, 2015).

The action of developing digital platforms is also perceived as a strategic action, a means of enhancing results and expanding opportunities for new online services and business development, most of the time driven by alliances (Capaldo & Messeni Petruzzelli, 2015; Deeds & Hill, 1996; Helfat et al., 2009) because technology development is the core business of CERS. Therefore, they need to gather different actors to generate digital innovations (Si & Chen, 2020). Considering CERS's market context, digital platform capacity has the potential to offer better executive search online services and human resources solutions to clients and professionals. Thus, it would be expected that the greater the extent of DC, the greater the firm's performance.

Hypothesis 1: The greater the DC presence, the greater the CERS' performance in terms of revenue from executive search online services.

Digital platform capacity development is intrinsically associated with DC presence (technical and evolutionary capacity) because of knowledge exploration aspects (Helfat et al., 2009; Karimi & Walter, 2015). Data sharing in digital platform development is mostly supported by relationship building and alliances with partners to improve technological performance or develop new platforms to offer differentiated products and services (Helfat et al., 2009; Karimi & Walter, 2015, 2021). These partnerships and alliances are only possible due to innovators' relational capacity to reconfigure existing resources and processes (Alberti-Alhtaybat et al., 2019; Capaldo & Messeni Petruzzelli, 2015). The professionalization of CERS, as well as knowledge-intensive positions demanded by the market, made CERS rethink their executive search processes and provide changes in ways of hunting talented executives digitally (Faulconbridge et al., 2009; Muzio et al., 2011). What used to be a service based only on the consultant's knowledge and contacts (Tienari et al., 2013) is today driven by a process involving methodical, planned analysis and in-depth research to develop target lists of the best executive talent, from a region or around the world, with the purpose of occupying a specific position (Gresty, 2014). Therefore, it would be expected that the greater the evolutionary fidelity of a firm's DC, the greater the improvement in the digital platform's capacity to provide differentiated executive search online processes. Therefore, the following is proposed:

Hypothesis 2: The greater the DC presence, the greater the digital platform capacity for the executive search online process.

Database and digital platform creation bring more dynamism to the executive search process and open business opportunities (Karimi & Walter, 2015, 2021; Skog et al., 2018) to CERS to obtain a variety of information to offer additional services. Digital platform capacity, manifested through processes or artifacts, leads to services transformation for CERS and the dissolution of traditional ways of doing business by reorganizing executive search process flows (Karimi & Walter, 2021; Skog et al., 2018). It allows rapid organizational progress, potentializing other digital services and enhancing dynamically in executive search stages, in addition to connecting CERS digitally with new potential clients. Digital platforms also allow CERS to add new services such as market professional mapping, psychological tests, and online meetings promoting new experiences during the executive searching process. When CERS pursue the development of digital platform capacity, they perpetuate their services to more predictable competition (Karimi & Walter, 2021). Thus, it highlights the following:

Hypothesis 3: The greater the digital platform capacity, the greater the CERS performance in the number of digital executive search services.

The literature also emphasizes the impact of digital platform capacity on business model development through reconfiguration, complementation, and reconstitution of digital technologies (Müller & Hundahl, 2018; Xiao et al., 2019). However, this process depends on a firm's ability to reconfigure, select, or adapt existing resources and effectively manage innovation projects (Helfat et al., 2009; Karimi & Walter, 2021). Business central rigidity may affect digital product and/or service availability (Leonard-Barton, 1992). Hence, DCs in recognition of digital disruption are only valuable through viable organizational processes

to promote technological evolution (Camisón & Puig-Denia, 2016; Cozzolino et al., 2018; Helfat et al., 2009; Karimi & Walter, 2015, 2021).

Therefore, digital strategies (De Reuver et al., 2018; Skog et al., 2018) require CERS to be digital first, creating attractive digital products for clients' choice (Kitchens et al., 2018). However, digital strategy does not mean just being connected; it means continuous and dynamic development with business partners through exploitation or exploration of resources, which is one of the characteristics of DC (Helfat et al., 2009). Digital platform capacity mediates the impact of DC on a firm's performance in relation to the number of digital products and services (Karimi & Walter, 2015). Therefore, the following is proposed:

Hypothesis 4: The DC presence in the number of digital executive search services is mediated by digital platform capacity.

3 Replicability of the Method

As a methodological replicated study, we adopted the survey instrument developed by Karimi and Walter (2015) in this study. A priori sample size calculations through G*Power (Faul et al., 2007) were used to ensure a sufficient sample size. Therefore, the estimated sample size used the following parameters: effect size – .15 (medium); significance – .05 (5%); test power – .95 (95%); the minimum sample number was 74 respondents. Thus, we recruited approximately 141 participants to join this study.

To make sure that respondents' self-reported data are reliable and free of common method bias, the following were applied: (1) questionnaire items were obtained only from self-report; (2) measures of dependent variables are a composition of revenue and number of online services since this information might be obtained only from senior professionals; and (3) all variables tend to be straight in nature. Respondents were reached by email, and data were collected through an online survey. The LinkedIn database and CERS's websites were used to collect the e-mail addresses, names, and positions of those senior professionals. The survey was followed by an instruction letter that was sent to emails identified according to local time between 8:30am and 6:00pm on weekdays. Respondents were asked to answer each question as CERS representatives, rather than basing responses on purely personal views. They were able to leave the questionnaire completely anonymous and confidential at any time.

For control purposes, web responses were registered by the date/time started, date/time sent and an ID session for each one, beyond respondents' positions, CERS's size, and time of service into the market for greater control of data. No survey submitted took less than eight minutes to complete. Following the protocol used, questionnaires were received, and reminders were sent to participants during the data collection phase. The adapted questionnaire was applied from the Survey Monkey platform and is presented in Appendix A. Data collection was conducted during the months of April and May 2021.

A total of 141 responses were collected after rounds of e-mails and messages sent by LinkedIn. No invitations were sent to respondents with positions or functions outside of the survey scope. No "missing value" was identified because the questionnaire was designed to avoid this type of issue where all responses were mandatory. This resulted in the full use of data. Descriptive statistics are presented in Table 2.

Table 2. Descriptive Statistics of Respondents

Job Title	**Pilot Survey**	**Final Survey**
Director	7	58
Senior Managers	2	15
Coordinators/Supervisors	2	13
Senior Analyst	5	36
Independent Consultant	6	19
Firm Year	**Total of responses**	**Percentage**
< 5 years	39	27.7
6 a 10 years	22	15.6
11 a 15 years	18	12.8

Table 2. Descriptive Statistics of Respondents

16 a 20 years	5	3.5
> 20 years	57	40.4
Number of employees	**Total of responses**	**Percentage**
1 a 5 employees	41	29.1
5 a 10 employees	20	14.2
11 a 15 employees	7	5.0
16 a 20 employees	5	3.5
> 21 employees	68	48.2
Year of online service availability	**Total of responses**	**Percentage**
Before 1989	8	5.7
1990 - 1999	7	5.0
2000 - 2009	25	17.7
2010 - 2019	69	48.9
From 2020	32	22.7

4 Comparability of Original and Replication Data

Examining internal consistency, we calculate factorial and statistical loads t, cross loads, Cronbach's alpha, means and standard deviations (Table 3). These statistics were compared with the original study, showing statistically significant differences in the mean values. All values are statistically higher than those collected from Karimi and Walter (2015), except for SGS4 and CP3. Confirmatory factor analysis (CFA) pointed out convergent and discriminant validities examining AVE and factorial structure among all constructs presented in Appendix B. Pearson correlations of 1st-order dynamic capabilities are presented in Table 4, and Pearson correlations of 2nd-order dynamic capabilities are presented in Appendix C.

Table 3. Psychometric Properties for First-Order Constructs

Replicated Study								Mean of Original Study	Difference
Constructs	**Item**	**Mean**	**Loading**	**test-t**	**AVE**	**CR**	**Alpha**		
RESOURCES									
Dedicated Financial Resources	DFR1	3.617	.442	34.160	.76	.81	.78	3.10	.517
	DFR2	3.397	.590	33.770				2.96	.437
	DFR3	3.589	.718	34.138				3.24	.349
Dedicated Human Resources	DHR1	3.908	.746	42.134	.80	.86	.69	3.06	.848
	DHR2	3.837	.587	42.718				3.21	.627
	DHR3	3.922	.590	49.456				3.33	.592
Senior management support	SGS1	3.851	.833	41.514	.89	.96	.88	3.72	.131
	SGS2	4.071	.737	42.956				3.80	.271
	SGS3	3.255	.828	32.276				3.29	.035
	SGS4	3.511	.831	32.436				3.57	-.059
PROCESSES									
Autonomous growth group	GCA1	3.816	.777	38.974	.89	.95	.91	3.05	.766
	GCA2	3.695	.779	36.181				2.87	.825
	GCA3	3.766	.847	38.872				3.08	.686
Staged allocation of	AFR1	4.071	.642	46.196	.75	.84	.77	3.71	.361

Table 3. Psychometric Properties for First-Order Constructs

resources	AFR2	3.560	.531	37.626				3.48	.080
	AFR3	3.511	.524	35.483				3.40	.111
	AFR4	3.872	.583	43.052				3.14	.732
VALUES									
Innovative culture	CI1	4.184	.720	50.560	.78	.85	.82	3.57	.614
	CI2	4.298	.444	59.358				4.01	.288
	CI3	4.234	.709	56.393				3.72	.514
Common language	CC1	3.787	.630	38.642	.80	.91	.79	2.99	.797
	CC2	3.709	.602	36.751				2.77	.939
	CC3	3.943	.606	47.587				2.63	1.313
	CC4	3.752	.651	42.434				2.79	.962
	CC5	3.766	.696	42.462				3.14	.626
Multimedia Mindset	MM1	4.220	.714	50.436	.75	.84	.76	NR	-
	MM2	4.390	.588	60.038				4.10	.290
	MM3	4.128	.507	50.922				4.01	.127
	MM4	4.142	.471	52.015				3.98	.162
RELATIONAL CAPABILITIES									
Alliances and Partnerships	APD1	4.014	.598	45.750	.82	.91	.83	NA	-
	APD2	4.177	.665	58.525				NA	-
	APD3	4.163	.691	53.563				NA	-
	APD4	4.021	.769	46.295				NA	-
Relationship Management	GR1	3.950	.720	41.997	.85	.93	.82	NA	-
	GR2	3.745	.594	40.256				NA	-
	GR3	3.837	.803	41.437				NA	-
	GR4	4.021	.809	45.988				NA	-
DIGITAL PLATFORM CAPACITY									
Platforms to connect with professionals.	CP1	3.553	.818	35.225	.89	.94	.83	2.77	.783
	CP2	3.468	.800	33.378				3.05	.418
	CP3	3.298	.740	29.694				3.48	-,182
Platforms to connect with companies	CE1	3.504	.706	34.359	.85	.91	.80	2.50	1.004
	CE2	3.156	.751	28.354				2.92	.236
	CE3	3.454	.699	31.794				3.12	.334

Notes: AVE = Average variance extracted; CR = Composite reliability; NR = Not reported; NA = Not applicable. All t-statistics for loadings are greater than 30, indicating high significance. The "Difference" reported the differences between the mean values of the total value of the replication study and the original study. For example, for "DFR1", the difference, .517, is calculated by subtracting the mean value of "Replication Study" (3.617) from "Original" (3.10). We also tested whether the "Difference" values were statistically significant by comparing the t tests ($p < .05$).

Table 4. Correlations of 1st-order Dynamic Capabilities

	1	2	3	4	5	6	7	8	9	10	11
1. Dedicated Financial Resources											
2. Dedicated Human Resources	.542										
3. Senior management support	.649	.732									
4. Autonomous growth group	.575	.642	.733								

Table 4. Correlations of 1st-order Dynamic Capabilities

5. Staged allocation of resources	.391	.526	.572	.525							
6. Innovative culture	.265	.450	.554	.487	.553						
7. Common language	.385	.449	.560	.622	.470	.537					
8. Multimedia Mindset	.303	.494	.488	.487	.556	.730	.535				
9. Alliances and Partnerships	.250	.415	.422	.442	.523	.585	.588	.638			
10. Relationship Management	.411	.399	.504	.566	.479	.453	.674	.446	.735		
11. Platforms to connect professionals	.363	.454	.416	.508	.365	.194**	.486	.246**	.397	.575	
12. Platforms to connect companies	.420	.418	.473	.514	.370	.146*	.425	.171**	.259**	.454	.749
Note: All p values <.001, except ** p <.05 and * p <.10											

Table 5 lists descriptive statistics for both indicators of the dependent variable (DR), which shows that most CERS reported 1 to 10 percent of revenue from all online sources. DR measures the overall performance of CERS in terms of the number of digital services (DR1) and the percentage of revenue from online sources (DR2) in executive search. DR1 and DR2 are formative indicators of digital services.

Table 5. Dependent Variable Descriptive Statistics

DR1	Frequency	Percentage	DR2	Frequency	Percentage
None	25	17.73	0%	19	13.48
1 a 2 services	28	19.86	1% a 5%	34	24.11
3 a 4 services	23	16.31	11% a 15%	17	12.06
5 a 6 services	17	12.06	6% a 10%	36	25.53
7 or more	48	34.04	Acima de 16%	35	24.82
Note: DR1: number of online executive search services; DR2: percentage of revenue from online services					

4.1 Replicated Structure Model

The results of structured equation modeling (SEM) are summarized in Table 6. Our model is slightly different from those of Karimi and Walter (2015). As mentioned previously, we extended the model by adding relational capabilities as a first-order construct of DC. In response performance (DR), the original study presented 21.7 percent of the explained variance obtained by running the model with response performance as the construct with two formative indicators (number of products online and revenue from online). In the replication study, the DR was 80 percent of the explained variance, indicating that the replication study demonstrated more power of predictability. Considering this result, a multicollinearity test, histogram, and normal residuals distribution were also analyzed, showing that they are under acceptable levels. We follow a recommendation from the literature where if the value of "VIF" is less than 5 for all predictors the topic is closed (Huber et al., 2007), and if there are values above we assume that the collinearity problem exists among factors. All VIFs of the predictors were lower than 3.257 (see Appendix D). We also identify the lines with a condition index above 15. According to Hair et al. (2009), for each row with a high condition index (>15), we search for values above .90 in the variance proportions. If we find two or more values above .90 in one line, we assume that there is a collinearity problem between predictors. If only one predictor in a line has a value above .90, this is not a sign of multicollinearity (Hair et al., 2009). In our data, we found only one result of .97 between values and digital platform capabilities.

All paths to dependent variables in the replication study (DR1= number of executive search online services; DR2 = percentage of revenue from online services) were modeled as paths to this formative construct. Table 6 presents the comparison of the SEM results between the original and replicated studies.

Table 6. Example of Format for Tables

Constructs	Replication Study	Original Study
RESOURCES (2nd Order)	.87	.39
Dedicated Financial Resources	.78	.87
Dedicated Human Resources	.67	.70
Senior management support	.80	.89
PROCESSES (2nd Order)	.92	.27
Autonomous growth group	.81	.88
Staged allocation of resources	.68	.80
VALUES (2nd Order)	.83	.45
Innovative culture	.82	.87
Common language	.70	.84
Multimedia Mindset	.68	.72
RELATIONAL CAPABILITIES (2nd Order)	.85	NA
Alliances and Partnerships	.67	NA
Relationship Management	.79	NA
Platforms to connect with professionals	.89	.91
Platforms to connect with companies	.88	.92
H1 = DC → DR2	.64	.19*
H2 = DC → DPC	.69	.52
H3 = DPC → DR1	.58	.19*
Note: all p values = p <.001 except * p <.01. DC = dynamic capabilities; DPC = digital platform capacity; NA = not applicable; DR1 = number of executive search online services; DR2 = percentage of revenue from online services. For response performance, 80 percent of the explained variance was obtained by running the model with response performance as a construct with two formative indicators		

DCs affect DR2 directly (H1). DC positively affects digital platform capacity (DPC) (H2), and DPC positively impacts DR1 (H3). Significance tests were performed using a bootstrapping procedure with 1,000 subsamples. All path coefficients are positive, indicating positive relationships between predictors and dependent variables. DC has a significant direct impact on DR2 ($\beta = .64$, $p < 0.001$ unilateral); therefore, H1 is supported. There is a strong and significant effect of DC on DPC ($\beta = .69$, $p < 0.001$ unilateral), so H2 is supported. The direct effect of DPC on DR1 (H3) is impactful ($\beta = .58$, $p < 0.001$ and statistically significant), so H3 is supported. All these results are in line with the original model developed by Karimi and Walter (2015). In this first analysis with SEM, our replication study explained 46 percent of the variation in DR1 and 51 percent of the variation in DR2. All paths for DR1 or DR2 have been modeled as paths for DR. High variation is not surprising given that CERS are currently highly dependent on online services in the initial screening of the executive search process when starting a search for professionals.

4.2 Indirect and Mediating Effect Tests on Performance

In this second analysis, we analyzed the indirect and mediation relationships of DC and DPC on performance. The confidence interval was calculated using a normal distribution and means of DC and DPC impacts on DR1. They are different from those on DR2. All path coefficients are positive, indicating positive relationships between predictors and dependent variables. DC also had a significant impact on DR1 ($\beta = 0.773$, $p < .05$), corroborating the SEM results and DR2 ($\beta = .913$, $p < .05$).

DPC has a direct effect on DR1 at a medium size ($\beta = 0.58$) and is significant ($p < 0.001$), corroborating the SEM results supporting H3 as well. This model explains 80 percent of the variation in DR. The path coefficients of DR1 → DR and DR2 → DR examined for formative construct validity with measurement were obtained using this model. The high variation explained is not surprising, given that in the executive

search sector, a high diversity of digital information about candidates is handled in the initial stages of the hiring process. Implementing their hunting strategies is a strategic part of the services for CERS.

The mediation test results are shown in Table 7. The confidence interval was calculated using a normal distribution, and the path coefficient was controlled. The effect of DPC on DR1 (c′) is medium sized (β = .583, p < .001), and when DR1 is mediated by DPC, the effect of DC on DR1 remains medium sized (β = .402, p < .001). The effect of DPC on DR2 (c′) is medium (β = .39, p < .001), and when DR2 is mediated by DPC, the effect of DC is even more significant (β = .91, p < .001). These findings are in line with Karimi and Walter's (2015) results demonstrating that DC is a strong predictor of performance for firms.

Table 7. DC Indirect Effects Tests on DR1 and DR2 using DPC

DR1		Est	Mean Replication	Mean Original	pvalue	Min	Máx
a	DC → DPC	.689	.684	.53	.002	.593	.769
b	DPC → DR1	.583	.577	.18	.002	.424	.717
c'	DC → DR1	.371	.372	.04	.002	.262	.482
a x b	DC → DPC → DR1 (H4)	.402	.395	.09	.000	.251	.551
C	DC → DR1	.773	.767	.13	.001	.513	1.033
Effect Size DR1		2.121					
DR2		**Est**	**Mean Replication**	**Mean Original**	**pvalue**	**Min**	**Máx**
a	DC → CPD	.689	.684	.53	.002	.593	.769
b	DPC → DR2	.397	.390	.02	.018	.089	.620
c'	DC → DR2	.639	.637	.18	.001	.541	.724
a x b	DC → DPC → DR2	.274	.267	.01	.000	.053	.477
C	DC → DR2	.913	.904	.19	.001	.594	1.201
Effect Size DR2		2.256					

Notes: All pvalue = p < .001; DC = dynamic capabilities; DPC = digital platform capacity; DR1 is the number of services in the executive search process; DR2 is the percentage of online revenue from executive search services.

5 Discussion

In this study, a direct positive effect of DC on DPC to build performance is identified. Additionally, first-order DCs are highly supportive of building digital platform capabilities. The major DC effect on performance is enhanced when mediated by DPC. This means that revenue comes from online services built from capabilities developed by CERS on building digital platform capacity. In other words, digital services are more directly impacted by digital platform capacity, and online revenue sources are affected by DC.

This replication study contributes to measuring key components of resources, processes, values, and relational capabilities to respond to DI. By extending, adapting, and creating DC to build digital platform capacity (Helfat & Raubitschek, 2018; Karimi & Walter, 2015; Schilke et al., 2018; Teece, 2018), CERS overcomes barriers to disruptive innovation (DI). DI theory is commonly accessed in a variety of settings by entrant-incumbent individuals who want to respond to disruption (Lucas & Goh, 2009). This is the first empirical study in Brazil examining DC in responding to DI in the executive search sector and empirically validating the mediation effect of digital platform capacity for firms from different levels of experience and profiles in the Brazilian market. It is one more piece of evidence that DC presence enhances a firm´s capacity to face DI.

Firms continue to be affected by digital transformation; therefore, firms need to enhance, redefine, and extend their products, services, and processes through digitalization. Digital world demand reshapes a firm's value proposition to stakeholders (Berman & Bell, 2011; Hampel et al., 2020). Thus, digitalization is also a relevant strategic action for CERS. Together with other service providers, CERS reconfigure their resources and values and process developing new relationships to develop new digital services (Mayer, 2019; Tilson et al., 2010).

Although DI research is largely engaged in other industries, an increase in new services has been raised in the market, demanding alliances among firms to respond to DI (Capaldo & Messeni Petruzzelli, 2015;

Chen et al., 2012). Thus, building digital platform capacity makes CERS more digitalized to extend the core business to new consumers.

For digital services improvements, CERS managers must pay attention to technological capabilities and digital technology planning to identify potential shortcomings in digital services. To be aware of digital technology planning, partnerships and alliances with stakeholders, or even when working alone, CERS should strengthen their capacity to reinvent their services to innovate and remain competitive. This perspective will allow them to engage the right professionals, information, and suppliers to grow beyond their core traditional business for new value creation. However, even though digital integration creates value-added to business by multichannel capabilities for candidates and firms, CERS's traditional culture may be exceedingly difficult to overcome in terms of recruitment standards, pursuing to let go of headhunters' biases in candidates' analysis as well. Digital agendas take time and attention from managers who are willing to be advanced in the executive search sector, keeping attention on the future of digitalization and not on traditional recruitment services.

6 Conclusion

Using the original study from Karimi and Walter (2015), this replication study analyzed the direct association of DC in digital platform capacity in terms of online revenues in executive search services. Additionally, it further investigates the mediation effect of digital platform capacity in terms of the number of online services, confirming a positive effect of DC in this context. This research gathers DC and DI theory as strategic management for international and national executive search firms established in Brazil. Enhancing digital platform capacity, CERS increase their competitive advantage and survival with a greater DC presence, which becomes an irreplaceable asset. There is no full development of DC or DI in emergent countries such as Brazil, nor has there been extensive coverage in the digital innovation literature. Therefore, this replication scraped from developed contexts where technologies are more accessible. Thus, it differentiates by proposing a broader explanation about the relevant attention that DC requires in changing, extending, or adapting resources to respond to disruption in CERS.

Additionally, adding relational capabilities in the research instrument complements and extends the DC perspective in a different business sector, which has never been researched before using this perspective. Relational capabilities amplified the theoretical contribution of this replication considering that they are relevant in many aspects of firms' performance, such as financial performance, innovation performance, internationalization, or competitive performance, using social mechanisms as core actors in a business network (de Almeida et al., 2022; Dyer et al., 2018; Pigola et al., 2021a; Pigola et al., 2021b; Smirnova et al., 2018), which are business outcomes pursued by CERS to play in their business sector.

Certain limitations exist about the cross-sectional data used, limiting causal inferences about DC on performance. If future studies further use longitudinal cases, they will draw additional interesting conclusions about the DC evolution process on DI. It may reveal other relationships between DC and digital platforms in response to DI, providing guidance for the practice of enterprises in emergent countries. Additionally, future research in DI should continue to examine the microfoundations of digital platform capacity to contribute to the information system literature. Revealing resource reconfiguration, creating conditions for DC presence to build digital platforms and digital strategies, and building key drivers for digital transformation, firms must provide appropriate support for novel approaches to innovativeness.

We encourage extending this analysis to other service contexts and further evaluating digitalization and digital strategy integration in business model innovation for emergent markets (1) by focusing on more digital services, (2) by identifying criteria to use and assess digital services, and (3) by improving the ability to offer more digital technologies. In addition, future research may also examine how new DC components impact other organizational contexts in search of successful interactions.

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Appendix A: Research Instrument (adapted from Karimi & Walter, 2015; Jarratt, 2008; Smirnova et al., 2018)

CERS IDENTIFICATION

1. Age of the company (number of years since foundation) (respondents choose less than 5 years; 6 to 10 years; 11 to 15 years; 16 to 20 years; over 20 years).

2. Number of employees (respondents choose 1 to 5 employees; 5 to 10 employees; 10 to 15 employees; 15 to 20 employees; More than 20 employees)

3. Year of online service availability (respondents choose Before 1990; 1991 – 2000; 2001 – 2010; after 2011)

4. Function (position occupied at CERS) (respondents choose Director; Senior Manager; Coordinators/Supervisor; Senior Analyst; Independent Consultant)

DYNAMIC CAPACITIES

Resources

Indicate the extent to which you agree or disagree with each of the following statements about the resources dedicated to new technology mapping and executive attraction services in the company:

Dedicated financial resources (DFR1-DFR3)

DFR1: There is currently a financial resource committed to the development of new services for mapping and attracting technology executives.

DFR2: Most of the time, additional financial resources have been or are allocated for the development of new services for mapping and attracting technology executives.

DFR3: We consistently dedicate investment to the growth of new services for mapping and attracting technology executives.

Dedicated human resources (DHR1-DHR3)

DHR1: We dedicate human resources to the development of new services for mapping and attracting technology executives.

DHR2: Our top talent today has the skill set we need to develop new technology executive mapping and attraction services.

DHR3: Our current top talent has the skill set that supports our strategic direction.

Senior management support (SGS1-SGS4)

SGS1: senior management provided legitimacy and visibility to innovation projects for new services for mapping and attracting technology executives.

SGS2: Senior management has shown great enthusiasm and interest in innovation projects for new services for mapping and attracting technology executives.

SGS3: senior management spent a high percentage of their time on innovation projects for new mapping services and attracting technology executives.

SGS4: The general level of senior management's commitment to innovation projects for new services for mapping and attracting technology executives is high.

Processes

Indicate the extent to which you agree or disagree with each of the following statements about processes for developing new mapping services and attracting technology executives in the company:

Autonomous growth group (GCA1-GCA3)

GCA1: Our group has a substantial criterion on which new services for mapping and attracting technology executives should be pursued.

GCA2: Our group has control over the resources needed for the development of new services for mapping and attracting technology executives.

GCA3: Our group has control over the development processes of new services for mapping and attracting technology executives.

Phased resource allocation (AFR1-AFR4)

AFR1: When we develop new services for mapping and attracting technology executives, we expect and allow course reviews and corrections based on what we learn as we go along.

AFR2: When we develop new services for mapping and attracting technology executives, we keep the investment small so that we can invest in a second or third improvement interaction.

AFR3: When we develop new services for mapping and attracting technology executives, we use small investments to first assess the viability of these services.

AFR4: When we develop new services for mapping and attracting technology executives, we encourage smart risk taking and "quick failures".

Values

Indicate to what extent you agree or disagree with each of the following statements about the company's trend toward new technology executive mapping and attraction services.

Innovative culture (CI1-CI3)

CI1: Our culture encourages people to look beyond the limits of our current business practices and our normal business model.

CI2: We can accept and execute ideas that "were not invented here".

CI3: Our culture encourages the development of new and innovative products and/or services.

Common communication (CC1-CC4)

CC1: The main concepts that reflect our main innovation principles are incorporated into the company's corporate documents.

CC2: Our employees are trained in our main innovation principles.

CC3: Everyone in our organization understands our change plan and sees its role in it.

CC4: There is a shared perspective on the main principles of innovation - from the front to senior leadership.

CC5: Investors and stakeholders share our perspective on the main principles of innovation.

Multimedia mindset (MM1 - MM4)

MM1: The leader(s) in our company are defenders of new digital media.

MM2: We consider our role as providers of recruitment and selection services to various market segments through the channel that best meets their needs.

MM3: We see our business as a local "intermediary" that meets the needs of recruiting and selecting talent, mapping technology professionals and executives through in-person and digital services.

MM4: We see our business as a portfolio of services with different business models, pricing and distribution strategies.

Relational Capabilities

Indicate to what extent you agree or disagree with each of the following statements about the company's relationships for the development of new mapping services and attracting technology executives.

Alliances and Partnerships (APD1 - APD4)

APD1: In the search for new alliances and partnerships, we always analyze unsuccessful and problematic experiences in business relationships with previous digital partners.

APD2: When necessary, we are willing to change the conditions and commitments of relationships with ongoing digital partners to deal with the change.

APD3: We are always looking for innovative relationship management practices with digital partners to pave the way for new partnerships and alliances.

APD4: We are constantly improving the policies that govern the relationship with our digital partners, paving the way for new partnerships and alliances.

Relationship Management (GR1 - GR4)

GR1: We share lessons learned from current and past relationships (disclosure of reports, sharing of experiences, alignment of negotiations).

GR2: We meet regularly with our digital partners to determine how our business relationships can be improved.

GR3: We are quick to detect changes in performance and in the way we interact with our partner organizations (for example, growing conflict).

GR4: We are actively looking for new ideas that will improve the management of relationships with our digital partners.

Digital Platform Capacity

Indicate the extent to which you agree or disagree with each of the following statements about the company's technological capabilities:

Platforms to connect with professionals (CP1 - CP3)

CP1: We created databases that contain extensive local information that technology executives need for career decisions.

CP2: We develop digital platforms for technology executives to share previous experiences, knowledge, and skills.

CP3: We develop digital platforms for technology executives to share news and information and participate in the community's dialog and conversation.

Platforms for connecting with companies (CE1 - CE3)

CE1: We created databases that contain information about technology executives and their behaviors that companies can use to reach a target group.

CE2: We develop digital platforms to launch digital relocation programs to technology executives for companies.

CE3: We develop digital platforms that make it easier or more accessible for companies to reach potential technology executives.

BUSINESS PERFORMANCE

DR1: In the past 12 months, how many mapping and technology executive attraction services via the digital platform have been operationalized (respondents choose none, 1-2, 2-3, 3-4, 5 or more)?

DR2: Estimate what percentage of annual revenue is represented by mapping and attracting technology executives through existing online sources (respondents choose less than 5%, 5% - 10%, 10% - 15%, 15% - 20%, above 20%).

Appendix B: Factor Loadings

Table B1. Factor Loadings, AVE, and CR for Constructs

	RESOURCES	PROCESSES	VALUES	RELCAP	DPC
Composite Reliability (CR)	.965	.944	.970	.961	.962
Cronbach´s Alpha	.903	.852	.886	.893	.888
Average variance extracted (AVE)	.827	.815	.780	.839	.867
Dedicated Financial Resources (DFR1-DFR3)	.583				
Dedicated Human Resources (DHR1-DHR3)	.641				
Senior management support (SGS1-SGS4)	.807				
Autonomous growth group (GCA1-GCA3)		.801			
Staged allocation of resources (AFR1-AFR4)		.570			
Innovative culture (CI1-CI3)			.624		
Common language (CC1-CC5)			.637		
Multimedia Mindset (MM1 - MM4)			.570		
Alliances and Partnerships (APD1 - APD4)				.681	
Relationship Management (GR1 - GR4)				.732	
Platforms to connect with professionals (CP1 - CP3)					.786
Platforms to connect with companies (CE1 - CE3)					.719

Note: All t statistics for uploads are greater than 10, indicating high significance. SGS, AFR, MM, APD and GR used four items. CC used five items. The remaining constructs used three items each. Legend: RELCAP = Relational Capabilities; DPC = Digital Platform Capacity

Appendix C: Intercorrelations

Table C1. Intercorrelations of 2nd-order Dynamic Capabilities

	1	2	3	4
1. RESOURCES	--			
2. PROCESSES	.601	--		
3. VALUES	.499	.721	--	
4. RELATIONAL CAPABILITIES	.755	.713	.619	--
5. DIGITAL PLATFORM CAPACITY	.518	.384	.490	.536
Note: p values are <.001				

Appendix D: Multicollinearity

Table D1. Multicollinearity Test among the Factors

	RESOURCES	PROCESSES	VALUES	RELATIONAL CAPABILITIES	DIGITAL PLATFORM CAPACITY
RESOURCES	-	1.846	2.424	2.473	2.368
PROCESSES	2.453	-	2.899	3.257	2.779
VALUES	2.792	2.512	-	2.073	3.177
RELATIONAL CAPABILITIES	2.361	2.340	1.719	-	2.183
DIGITAL PLATFORM CAPACITY	1.517	1.532	1.547	1.465	-

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