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INNOVATION ON THE VENDOR SIDE – ANALYZING THE EFFECTS OF INNOVATION INITIATIVES ON OUTSOURCING PROVIDERS' PERFORMANCE

Research Paper

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Abstract

'Innovation through outsourcing' describes a firm's strategy to receive innovation by outsourcing IT or IT-intensive processes to more competent and innovative service providers who, in turn, do not only operate those activities but also improve and innovate for or on behalf of their clients. This strategy has gathered some attention from recent research, though it has mainly examined the client perspective, yet. We contribute to this sub-field of outsourcing research by analyzing vendors' strategies to improve their innovation capability and thus to be more innovative for their clients. Based on a longitudinal dataset of 136 outsourcing vendors, we analyze which innovation-enabling initiatives are related to superior firm performance (in terms of revenue growth). We find that particularly employee-involving initiatives are promising: outsourcing vendors that have implemented, e.g., idea/innovation platforms that support employee-driven innovation, receive above-average revenue growth.

Keywords: Outsourcing, Innovation, Vendor Strategies, Performance Analysis.

1 Introduction

Many outsourcing service providers see themselves as innovation promoters committed to drive innovation for their clients, i.e., coming up with suggestions and solutions for improving or even radically innovating clients' products and services or their internal processes and utilization of IT resources (Oshri et al. 2015; Aubert et al. 2015). In this concept, known as 'innovation through outsourcing', clients expect their vendors to act as strategic innovation partners (Aubert et al. 2015; Oshri et al. 2015; Mani and Barua 2015). Therefore, in turn, many providers have implemented company-wide innovation programs to boost their innovation capacity and create new opportunities for growth in the consolidated Information Technology Outsourcing (ITO) and Business Process Outsourcing (BPO) markets (Meiser and Beimborn 2020; Lacity and Willcocks 2013).

So far, only little research has looked at 'innovation through outsourcing' from the vendor side and, particularly, has not focused on understanding the capabilities that vendors build to fulfill their clients' innovation expectations (Gambal et al. 2022). Kotlarsky et al. (2016), to our knowledge, were the first in this regard when they analyzed how IBM employed different innovation-enabling management approaches to serve their clients. Building on Kotlarky et al.'s work, Meiser and Beimborn (2020) did a broader qualitative study identifiying innovation initiatives from a broad set of ITO and BPO vendors.

As these innovation initiatives are often a significant investment, providers are concerned with the question which innovation programs are most promising in terms of business performance. However, so far, nothing is known about the financial effects that outsourcing vendors can expect from implementing innovation-enabling initiatives. Therefore, our research builds on the previously mentioned studies of

identifying vendor-side innovation initiatives and addresses the mentioned gap by analyzing the relationship between these innovation initatives and vendors' financial performance. In particular, this paper aims to answer the following research question: *To what extent do (different types of) vendor-side innovation-enabling initiatives have an impact on their (i.e., outsourcing vendors') financial performance?*

To answer this question, we first review the literature on 'innovation through outsourcing' and then derive our hypotheses. After introducing our dataset and methodology in Section 4, the fifth section presents the results of our quantitative analysis. Finally, we discuss the results, their implications, limitations, and potentials for future research.

2 Literature Review

Our study comprises both ITO and BPO. While ITO primarily deals with contracting out IT assets, resources, and activities (Hanafizadeh and Zareravasan 2020; Grover et al. 1996), BPO describes a company's strategy to call on resources of external providers for the transaction of IT-intense business processes or services (Dayasindhu 2004; Lacity et al. 2011).

In earlier decades, companies mainly used ITO and BPO as cost-saving instruments, leading to a massive rise in outsourcing contracts since the early 1990s (Lioliou and Willcocks 2019; Oshri et al. 2015; Lacity et al. 2011). As outsourcing has become widely applied, more than its cost-cutting benefit is needed to gain competitive advantages. As a result, more and more companies expect their outsourcing providers to be enablers of innovation (Susarla and Mukhopadhyay 2019; Oshri et al. 2015) and aim to profit from their business concepts, technologies, networks, and expertise (Lacity and Willcocks 2013).

In general, corporate innovation activities focus on product/service innovation or process innovation (Susarla and Mukhopadhyay 2019). While process innovation deals with establishing new ways and methods to deliver value, product/service innovation comprises the creation of new or substantial improvement of existing products, technologies, or services (Tushman and Nadler 1986). If a firm has outsourced larger parts of its IT activities or business processes, innovations in these areas usually emerge from partnerships with its outsourcing vendors and represent new/customized solutions to the client firm's specific requirements (Mani et al. 2010; Oshri et al. 2018; Gambal and Asatiani 2019). These solutions may be part of the vendor's existing portfolio of products and services or arise as a joint outcome of combined innovation efforts between vendor and client (Su et al. 2016), and they may target the IT function, IT infrastructure, administrative tasks, or even the client's core business (Gambal and Asatiani 2019). This often requires clients to share their business processes, resources, and competencies with their vendors (Goo et al. 2007; Gambal and Asatiani 2019). While such a cooperative and open approach to innovation allows leveraging synergy effects and mitigates innovation failures (Boehm et al. 2014; Pellegrini et al. 2012), the exchange of sensitive information does also bear various risks, as well as losing the own innovation capability or the exclusiveness of an innovation result, when vendors offer similar solutions to competitors (Whitley and Willcocks 2011; Weeks and Feeny 2008). Besides, it is conceivable that one innovation partner systematically steers innovation efforts toward his self-interest (Aubert et al. 2015; Gambal and Asatiani 2019). Therefore, implementing an appropriate governance and establishing mutual trust are essential to reduce the risk of opportunistic behavior in outsourcing partnerships and to receive 'innovation through outsourcing' (Gambal et al. 2022; Boehm et al. 2014). Overall, there is some, but not much, scientific evidence that innovation can truly be received through outsourcing; one of those few notable studies is from Susarla and Mukhopadhyay (2019), who showed that client firms can actually achieve both service innovation and process innovation through outsourcing when they have made credible commitments to the relationship and have implemented adequate control rights over realized innovations in their vendor governance.

Like the before-mentioned study, most research on 'innovation through outsourcing' has focused on the client side (Gambal et al. 2022), but very few studies have truly taken the vendor perspective into account. In their very recent literature review, Gambal et al. (2022) list only five papers in top IS journals that have explicitly addressed the vendor side. Most of them look at innovation outcomes, such as custom software development (e.g., Tiwana 2010), or the impact of vendor innovation on the client (e.g., Levina and Ross 2003; Langer and Mani 2018). None of them aims at understanding which capabilities

vendors need to build and which actions they need to take to deliver superior innovation outcomes for their clients and to be more successful than their competitors.

The first study in this regard, to the best of our knowledge, has been conducted by Kotlarsky et al. (2016); looking at different innovation practices that IBM established for or with some of their clients and applying an affordances lens as theoretical perspective, they revealed how IBM managed innovation and overcomes different managerial paradoxes. In essence, IBM implemented external innovation networks and internal innovation-enabling structures such as dedicated innovation processes and organizational innovation units (e.g., R&D labs), and they invested in explicit educational and training activities for their staff. Meiser and Beimborn (2020) built on Kotlarsky et al.'s (2016) single-case study findings and used a dataset from a large set of vendors to identify 22 different kinds of innovation-enabling activities that those outsourcing providers implemented to create innovation for their clients. The main objective of their work was to systemize this variety of innovation initiatives; they categorized them into four dimensions: *Collaboration, Structures, People, and Events.* They also asked outsourcing managers from the client side to evaluate the meaningfulness of the vendors' different innovation initiatives. They found that clients find structural approaches, such as implementing innovation labs or design-thinking processes, but also external collaboration (involvement of customers or engaging in industry associations) particularly promising to drive innovation for them.

However, Meiser and Beimborn's assessment involved only a few outsourcing managers, and they confess that their findings are weak indications only. To understand which types of innovation enablers are truly valuable, we need other research approaches. This drove us to study whether an engagement in certain programs is reflected by superior firm performance from a vendor's point of view. In the following, we will draw on the findings of Kotlarsky et al. (2016) and Meiser and Beimborn (2020) in so far that we adopt their vendor-side perspective and adapt their categorization of innovation initiatives by analyzing the relevance of innovation enablers. We go beyond their work by applying a quantitative approach and relate the different types of innovation enablers to vendors' financial performance.

3 Development of Hypotheses

Research has spent significant effort on exploring the success factors of innovation management. It provides valuable insights into the field of innovation and outsourcing that we consider for developing our hypotheses. Innovation management contributes to a firm's dynamic capabilities as it helps a firm sense and seize new opportunities and thus secure and bolster its competitive position (Salunke et al. 2011). While the strategy literature holds various conceptualizations of dynamic capabilities, Joshi et al. (2010) developed a theoretical model based on absorptive capacity and dedicated to studying innovation, which shows to be most suitable to structure our hypotheses. Joshi et al. define three dynamic capabilities: (1) tasks that help the firm acquire new knowledge from outside; (2) tasks that help the firm transform and utilize the absorbed knowledge, and (3) social connectenedess, interaction, and coordination among the members of the firm that create networks of employees and knowledge and thus help disperse it and gather innovation from this network (Joshi et al. 2010). In the following, we use Joshi et al.'s Dynamic Capabilities lens to derive three hypotheses about which innovation initiatives are supposed to contribute to an outsourcing vendor's performance in which way.

First, firms establish and utilize external links and engage in various forms of inter-organizational collaboration to acquire new knowledge and explore new innovation opportunities (Laursen and Salter 2006). In particular, requirements and feedback gathered from customers are essential for achieving customer-oriented innovation and high customer satisfaction, in general (Foss et al. 2011), and in outsourcing partnerships (McCollough et al. 2000; Yoon and Im 2005). This is more likely to be the case if vendors can get a well-sophisticated understanding of valuable products and services from a client's point of view (Goo et al. 2007; Gambal and Asatiani 2019) and highlights the importance of vendors' effort and expertise in communicating and collaborating with its clients (Mani and Barua 2015; Weeks and Feeny 2008). Engaging in special forms of collaboration should also increase the probability of expanding existing outsourcing arrangements and suggests that the vendor's financial performance is not independent of its collaboration competencies. Building up, '*Collaboration'* activities can embrace

several activities, such as *Involving customers* in the innovation process (e.g., implementing customer feedback solutions, performing brainstorming sessions with clients, or conducting customer surveys), to get a precise picture of the clients' needs. But, external collaboration for driving innovation is obviously not restricted to customers, but does also comprise *Collaboration with startups* or *key players* from the technology field (e.g., Microsoft, Oracle, Google, etc.) to get a sound understanding of current industry trends or technological developments. Moreover, the innovation literature also considers *Memberships in associations* and *Collaboration with academia* as additional innovation sources for gathering information about innovative concepts or practices (Moos et al. 2015; Laursen and Salter 2005). These approaches of *Collaboration* are characterized by the opportunity to gather valuable insights into how to increase customer value. To sum up, we expect*:*

H1: Innovation-oriented inter-organizational collaboration engagements will be positively related to the vendor's financial performance.

Second, outsourcing vendors need dedicated internal structures to process new knowledge and transform it into ideas and innovation. Although not the only option, many studies have argued for the effectiveness of *centralized* innovation structures since they bundle expertise, ensure constant attention for opportunities, and foster organizational learning (O'Connor and DeMartino 2006, based on Eisenhardt and Martin 2000), and they create synergies across business lines (Iansiti and Lakhani 2014). According to Meiser and Beimborn (2020), such centralized approaches are also frequently employed by outsourcing providers, which are mainly using *R&D programs, Innovation Labs, Centers of Excellence, and Incubators or accelerators*. These organizational structures are supposed to enable vendors to realize synergies and uncover their innovation potential, which because of the clients' increased preferences for 'innovation through outsourcing' pays off in terms of higher market performance. Accordingly, we formulate the following hypothesis:

H2: Innovation-oriented organizational structures will be positively related to the vendor's financial performance.

Lastly, as a third capability, vendors need to establish and facilitate social connectedness and interaction among the members of the firm (Joshi et al. 2010). In recent years, firms have implemented approaches of employee-driven innovation, defined as "the generation and implementation of new ideas, products, and processes […] originating from interaction of employees, who are not assigned to this task [i.e., generating innovation]". (Kesting 2010, p. 66). Companies invest in training, incentives, and other measures to enable their workforce to contribute with innovation (Bartlett II et al. 2014; Vemić 2007). The findings of Kotlarsky et al. (2016) and Meiser and Beimborn (2020) confirm that outsourcing providers are not different in this regard and view the management of 'their' human capital as a part of their strategy to improve their offered services. Such *Employee*-focused approaches cover trainings that aim to deepen employees' understanding in certain areas of expertise (*Employee coaching*) or strengthen their entrepreneurial mindset but also comprise career or mentoring programs (*Talent management*). If these programs enhance the expertise and ambition of employees, they might be able to contribute to the development of innovative products and services or improve existing ones. Moreover, *Employee coaching* and *Talent management* can accelerate careers (Parker et al. 2008) and help ensure sustainable leadership (Boyatzis et al. 2006; Kombarakaran et al. 2008), which can become a crucial factor for effective and efficient implementation of client-related innovations (Whitley and Willcocks 2011). Furthermore, vendors use internal hackathons and employee-oriented innovation platforms (Reibenspiess et al. 2022) to pull ideas for innovation from their own talent resources effectively. However, causal evidence is rare (Martins 2020) as only very few studies indicate that employee training efforts might impact firm performance in a positive way (Agarwal et al. 2009; Martins 2020); the recent literature review by Opland et al. (2022) on employee-driven *digital* innovation echoes that in this particular field such studies "are completely absent" (p. 263). However, although it remains questionable whether employee-related initiatives will translate into significant measurable effects on the organizational level, existing theory supports a positive relation to firm performance. *As a result, we propose:*

H3: Employee-focused innovation initiatives will be positively related to the vendor's performance.

The following section explains the methodology and data used to evaluate the three hypotheses.

4 Methodology

4.1 Sample and data collection

The data used in this paper mainly comes from three sources. The innovation initiatives of outsourcing providers were drawn from reports for an global industry ranking of ITO and BPO providers. These reports contained information about innovation-enabling initiatives aimed at increasing vendors' own capability to create innovation for their clients. The description of those innovation initiatives was cross-validated by announcements in media or through reference customers' acknowledgments. As a second data source, the Thomson Reuters DataStream was used to collect the total revenues (in USD) of the participating firms. Third, publicly available information about the total revenues of the companies such as annual reports or SEC Filings (8-K/10-K) were added. In sum, our dataset consists of 214 outsourcing providers and 561 reports for the years 2016 to 2021.

In 2019, no survey was conducted. The distribution of the participation frequencies shows that 74 companies only took part once in the survey, and 96 companies participated at least three times (Table 1). 45 companies participated every year. For analytical purposes, we defined at least three data points of any of our performance figures to be necessary for a vendor being included in the sample. Therefore, 78 companies (36.4%) had to be excluded from the analysis, leading to a final sample of 136 vendors.

Year	*16*	*17*	*18*	*20*	*21*	*N=1*	*N=2*	*N ≥ 3*	*N ≥ 4*	*N=5*	*Firms*
Dataset	128	125	112	93	103	74	44	96	66	45	214
Sample	98	100	112	72	73	23	18	95	66	45	136

Table 1. Dataset and sample

4.2 Measurement

Our endogenous variable, firm performance, is typically viewed as a multi-dimensional and complex construct (Taouab and Issor 2019; Chakravarthy 1986). In our case, we have to use revenue-based figures since a substantial part of the firms in our sample are not publicly reporting companies, where other financial data, such as company valuation metrics, are unavailable. However, sales growth has been frequently applied as key metric in innovation-related performance measurement (Falk 2012; Nold 2012).

Two metrics are applied for operationalizing revenue growth, namely *outsourcing revenues* and *total revenues*. While *total revenues* are annually reported in financial statements, we define *outsourcing revenues* as revenues being generated by the firm's outsourcing business line and use values of the *total revenues* for firms that can be considered as being only or mainly active in the outsourcing business (at least 75% of sales were generated through outsourcing services).

When classifying the innovation initiatives of the companies, we have to recognize that the implementation and its effects often stretch across multiple years. Correspondingly, we examine firm performance effects using both year-to-year changes and changes over a multiple-year period and follow an analytical concept similar to the event study performed by Yang et al. (2021). Year-to-year revenue changes over multiple periods were considered by applying the average annual growth (AAG) over the sample period, while the revenue change over a multiple-year period, according to Yang et al. (2021), was measured by the relative growth (RG) from the base year to the latest year as a second metric.

The year before the first observation point serves as the base year (t_0). The following three-year period, covering the data from 2016 to 2018, represents the time of initiative implementation, including the short-term impact on firm performance, whereas the three-year interval after the implementation (including 2020 and 2021) acts as the measure of the long-term impact on revenue trend.

As a result, four different metrics can be employed to expose the effects of innovation initiatives on firm performance:

- First, we use the RG of outsourcing revenues and the RG of total revenues from the base year (t_0) to the latest available year (t_6).
- Second, the AAG of outsourcing revenues and the AAG of total revenues over the sample period are considered as dependent variables. Following the approach of Nold (2012), the AAG is calculated by dividing the sum of the annual growth rates by the number of yearly returns.

Average annual growth (AAG)	**Relative growth (Rel. growth)**
$\frac{\sum_{t=t_0}^{T} \text{annual revenue growth t to t+1}}{T}$ if T ≥ 3	$\frac{\text{revenue}_{t_{0+T}} - \text{revenue}_{t_0}}{\text{revenue}_{t_0}}$
where t_0 = base year and revenue = outsourcing revenue or total revenue T = number of periods with data available	

Table 2. Calculation of dependent variables.

Although most of the values for the average annual growth are based on five yearly returns, all results with at least three returns were considered for the calculation to have less missing values. This flexible calculation approach can be seen as an advantage of the average annual growth rate compared to other metrics or figures.

Another benefit is the robustness of the measure. The diversity of the innovation initiatives makes it difficult to determine an appropriate time lag when measuring the impact of firms' innovation initiatives on revenues. By using the average annual growth, we do not need to specify an exact time lag in which performance effects should be observable (e.g., one, two, or three years) but can measure short- and long-term effects on firm performance. Therefore, the average annual return has been commonly applied in different forms when analyzing the relationship between independent variables and firm performance (Griffith et al. 2006; Nold 2012).

The independent variables were defined by classifying the companies' specific innovation activities according to both the theoretically motivated derivation of the hypotheses and the *innovation enabling initiatives* (Table 3) explored by Meiser and Beimborn (2020), given that we have to work with those types of innovation initiatives that are available in the data. An initiative was coded with 1 if the company reported an respective engagement and 0 otherwise. For the coding of the independent variables, only reports from 2016 to 2018 were considered, leading to a total number of 219 innovation programs of 12 categories, which could be identified across the 310 reports of the final sample (N = 136).

To increase the reliability of our coding, we compared our coding of the reports from the first year (2016) with the coding done by a third researcher who worked independently with the same data set. Overall, 96% of all coding decisions were similar (accuracy); 79% of all activities that we classified as innovation initiatives were considered as the same innovation program by the other researcher (precision), which shows that our evaluation of the innovation programs is reasonable.

The twelve innovation initiatives were finally aggregated into the three higher dimensions theoretically derived above (*Collaboration, Structures, Employees*) using an AND-operator. Hereby, our theoretical argumentation led to a deviation from Meiser and Beimborn's categorization. While they divided the initiatives into four dimensions, we split up their *event* dimension depending on the source of innovative ideas: while conferences can mostly be seen as external sources of innovation (Laursen and Salter 2006), in internal hackathons, workshops, and research challenges the innovative ideas stem from the internal workforce. Therefore, we added research challenges, hackathons, and workshops to the *Employees* dimension and thus reach a cleaner separation of approaches for external collaboration and employee-driven innovation. Lastly, we omitted conferences as we view their number of occurrences (n = 23) as not sufficient to include it as separate dimension anyway.

Dimensions and Initiatives	N	Description
Collaboration	95	
Membership in association	6	Being an established member of an association
Collaboration with key players	36	Maintaining collaboration with technical or branch specific key players to develop joint products, services or frameworks
Collaboration with startups	11	Collaborate with startups for developing new ideas and solutions
Customer involvement	30	Involve clients in the innovation process and use clients' feedback for product or service improvements
Collaboration with academia	12	Collaboration with universities or research institutes
Structures	54	
Centers of Excellence (CoE)	24	Establish a CoE to gain and build up knowledge in a specific field, e.g., IoT, AI
Innovation labs	20	Build up an Innovation Lab to concentrate innovative potential
R&D programs	10	Research and Development programs to explore the potential of new technologies and industry trends
Employees	70	
Employee coaching	23	Train employees' professional skills or expertise by offering courses, programs, case studies etc.
Hackathons & Workshops	17	Internal hackathons or workshops to generate ideas and prototypes
Research challenges	11	Organize research challenges to develop prototypes, concepts or business cases and give awards for winning ideas
Innovation platforms for employees	19	Implementing company-wide platforms to share, evaluate, and reward employee-based ideas
Sum	**219**	

Table 3. Innovation initiatives (based on Meiser and Beimborn (2020)) and # of observations.

As control variables, we used firm size (natural log of # employees), vendor location (North America, Europe, Asia, others), and whether the firm is publicly listed or not (the latter used as basis).

We evaluated the data for correlations and outliers. Table 4 provides the correlation matrix of the independent variables. Firm characteristics and performance metrics are summarized in Table 5. As can be seen, we could only find data for the total revenues for roughly half of the companies (N = 64). This can be attributed to the fact that a major part of the firms (63.9%) are not publicly listed and therefore often do not publish financial reports. From the minimum and maximum number of employees and as well as from the distribution of the total revenues, we see that the sample ranges from relatively small companies with roughly 27 million USD of total revenues and 27 employees to huge companies with more than 55 billion USD of revenues and more than 500k employees.

	Structures	Collaboration	Employees	Size	Public	Asia	Ohers	Europe
Collaboration	.38	1	.23	.09	-.12	-.08	0	-.08
Structures	1	.38	.20	.17	-.08	-.05	.08	.13
Employees	.20	.23	1	.02	-.10	-.19	0	.12
Size	.17	.09	.02	1	.51	.20	-.29	.06
Public	-.08	-.12	-.10	.51	1	.12	-.28	.09
Asia	-.05	-.08	-.19	.20	.12	1	-.23	-.20
Ohers	.08	.00	.00	-.29	-.28	-.23	1	-.17
Europe	.13	-.08	.12	.06	.09	-.20	-.17	1

Table 4. Correlation matrix of the independent variables.

Metric	N	Mean	Min	.25 quartile	Median	.75 quartile	Max
Total revenues	64	5,210.2	26.8	308.6	1,123.8	4,902.9	55,685.0
Outsourcing revenues	134	1,555.9	.5	24.6	137.5	883.1	55,685.0
Number of employees	136	22,391	27	715	3,587	19,097	503,139
AAG Outsourcing	123	17 %	-7 %	5 %	14 %	24 %	141 %

Table 5. Descriptive statistics: Total revenues and outsourcing revenues correspond to the first year (2016) and are denoted in million USD. Number of employees represents the average number of employees over the sample period. AAG Outsourcing is the average annual growth of outsourcing revenues over the 6-year sample period.

Half of the companies are at most 1.12 billion USD in total revenues and 137.45 million USD in their outsourcing business line. The mean of the AAG of outsourcing revenues is 17% and the median is 14%. In contrast, the *maximum* AAG is 141%, which is very high compared to the 75th percentile (24%) and indicates the existence of some extreme values. Therefore, we looked at outliers and omitted two firms with extremely high values in AAG or RG, respectively, of outsourcing revenues and three (one) observations for extremely high AAGs (RGs) of total revenues. Table 6 provides an overview of the final sample sizes. While computing the AAG requires at least three yearly growth rates during the sample period, the relative growth requires data for the base year and the last year, which is why the number for the relative growth is lower than for the AAG.

Dimension/Metric	Average annual growth (AAG)	Relative growth (RG)
Outsourcing revenues	119	80
Total revenues	64	50

Table 6. Final sample sizes for regressions with the different dependent variables.

Not shown in the tables is the geographical distribution of vendor locations, which is as follows: North America (N = 67), Asia (N = 28), Europe (N = 17), others (N = 24).

4.3 Analysis

To test our hypotheses, we used two different approaches. On the one hand, we used OLS regressions, as they belong to the most robust and accepted parametric estimation approaches (Sabherwal and Jeyaraj 2015; Wang et al. 2015). T-tests and p-values, based on robust standard errors, were applied to estimate whether the results are statistically significant.

R^2 and adjusted R^2 serve as indices for the model's overall fit. Although we cannot report all the numerical details in this paper, we have ensured that our data is suited for the chosen estimation approach: multicollinearity showed to be no issue (cf. Table 10 for the VIF values, which are all clearly below 2), and the other main assumptions of linear regression models – linear relationship, normal distribution, homoscedasticity – were sufficiently fulfilled, as well[1].

As the various innovation initiatives might not be independent of each other, we used a second approach, based on group comparisons. We followed the idea of Rohrbeck and Kum (2018) and classified the sample, according to the dependent variables, into outperformers, average, and underperformers, and counted the number of occurrences of each initiative per group. The outperformer group contains the 33.3% of companies with the highest performance, while the underperformer group contains the third

[1] First, we checked for normally distributed error terms in our model. Q-Q plots showed that only a few residuals deviate from the diagonal, suggesting a normal distribution of the error terms (cf. Figure 1 in the Appendix). By comparing the standardized residuals to the fitted values, we could observe whether the variance of the residuals is equally distributed. Third, we checked that the relationship of the residuals is linear. Finally, we looked at Cook's distance, which can be applied to identify influential observations and gives a rough indication of how much a regression model changes when outliers are removed. After using boxplots to detect outliers, applying Cook's distance confirms that there are no predominating observations in our sample.

of the firms with the lowest. This approach enables us to differentiate 'winners' from 'losers' by finding the direction of effect (positive, negative) rather than its strength, making it diagnostically more robust than linear regression (Rohrbeck and Kum 2018). As there is no common standard in literature for estimating statistical significance in descriptive statistical techniques, we follow Rohrbeck and Kum (2018) and use the percentage difference between the number of low vs. high performers that engage in an initiative as indicator for significance. We judge a difference of at least 25% (30%) as to be (highly) significant, but only if the initiative has been reported at least 25 times ($n \geq 25$).

5 Results

In the following, we present the results of our analysis. As mentioned before, we apply two different techniques to examine the relationship between innovation enablers and firm performance. We start with the group comparison approach before presenting the regression-based hypotheses testing results.

5.1 Results of group comparison approach

Results for using the outsourcing revenue as the grouping variable are reported in Table 7. The table shows the average number of initiatives (count) for each of the three groups (left: grouped by AAG of outsourcing revenue; right: grouped by RG of outsourcing revenue). The most balanced distribution among the performance clusters can be observed for the *Collaboration* dimension (AAG: outperformers: 29, average: 31, underperformers: 27; RG: outperformers: 22, average: 16, underperformers: 19) for both dependent variables.

In contrast, the *Structures* and *Employees* variables are characterized by a positive skewness, which is even greater for the *Employees* dimension, where we could identify more than twice as many initiatives among the outperformers (AAG: 33; RG: 25) compared to the underperformers (AAG: 15; RG: 7) or the average (AAG: 16; RG: 6) – for AAG, the differences are 25 and 29 percentage points, which we interpret as fulfilling the lower significance level, according to (Rohrbeck and Kum 2018); for RG, the difference is 48 percentage points (66-18), thus fulfilling the higher significance level.

The results remain mostly consistent but become even more compelling when we apply the performance classification for the *total revenue* dimension (Table 8 below). Here, the skewness of the *Employees* variable is highly positive for both metrics (AAG: outperformers: 22, average: 7, underperformers: 5). Again, we also see a positive skewness for the *Structures* variable, though it is not as pronounced as for the *Employees* dimension. This time, *Collaboration* also tends to be positive, especially when we look at the relative growth (RG: outperformers: 18, average: 9, underperformers: 8).

Outsourcing Revenue												
	AAG						***RG***					
Group	Low	%	Avg	%	Top	%	Low	%	Avg	%	Top	%
N of firms	40		40		39		27		27		26	
Mean of AAG/RG	.01		.13		.31		.06		.88		3.57	
Median of AAG/RG	0		.14		.28		.03		.88		2.71	
Number of initiatives (for each category) in each company cluster												
Collaboration	27	*31*	31	*36*	29	*33*	19	*33*	16	*28*	22	*39*
Structures	12	*24*	14	*27*	25	*49*	8	*24*	9	*27*	16	*48*
Employees	15	*23*	16	*25*	33	*52*	7	*18*	6	*16*	*25*	66

Table 7. Classification results of grouped initiatives: outsourcing revenues. N = # firms. Combined N for AAG is 119 and N for RG is 80. (Slightly) shaded cells represent (weakly) significant positive relationships. Differences are assumed to be (weakly) significant if $n \geq 25$ and if the percentage difference in the number of initiatives between high and low performers is at least 30% (25%).

To sum up, the results are quite consistent among the defined metrics and reveal that there seems to be a positive trend between the number of initiatives from the *Employees* dimension (H3 supported) and – to some minor extent – for the *Structures (*H1 mainly supported*)* dimension and revenue trend. Regarding the collaboration dimension, the mixed results are not convincing enough to support H2.

Total Revenue												
	AAG						***RG***					
Perf. Cluster	Low	%	Avg	%	Top	%	Low	%	Avg	%	Top	%
N	21		21		22		17		17		16	
Mean	-.01		.10		.22		-.10		.62		1.71	
Median	0		.09		.21		-.06		.57		1.69	
Number of initiatives (for each category) in each company group												
Collaboration	9	*23*	13	*33*	18	*45*	8	*23*	9	*26*	18	*51*
Structures	5	*19*	7	*27*	14	*54*	5	*23*	3	*14*	14	*64*
Employees	5	*15*	7	*21*	22	*65*	5	*18*	4	*14*	19	*68*

Table 8. Classification results of grouped initiatives: total revenues. N: # group size. Overall N for AAG is 64 and 50 for RG. Highlighted cells represent positive relationships. Variables are assumed to be relevant at a lower (higher) significance level if n ≥ 25 and if the percentual difference in the number of initiatives between high and low performers is at least 30% (25%).

5.2 Results of OLS regression

Table 9 provides the results of the regression with the innovation initiatives as determinants and with the four different performance metrics as dependent variables. The results show a significant positive relationship between employee initiatives and most revenue growth variables, indicating that implementing an employee-oriented innovation initiative leads to comparatively higher revenues (H3 mainly accepted). For the other innovation initiatives, similar results could not be found (H1 and H2 rejected). Overall, there is evidence for increased firm performance of vendors if they invest in their innovation capability, particularly into innovation initiatives that involve their employees.

		AAG Outsourcing Revenue (1)	**RG Outsourcing Revenue (2)**	**AAG Total Revenue (3)**	**RG Total Revenue(4)**
(Intercept)		**.162**** (.058)	**1.872*** (.722)	.016 (.052)	-.291 (.577)
Collaboration (H1)		-.028+ (.015)	-.474+ (.255)	-.008 (.012)	.100 (.119)
Structures (H2)		.013 (.017)	-.259 (.293)	.037+ (.021)	.230 (.226)
Employees (H3)		.033+ (.019)	**.893*** (.368)	**.048**** (.016)	**.480***** (.112)
Controls	Size	.000 (.007)	-.011 (.078)	.006 (.006)	.028 (.051)
	Public	**-.059*** (.028)	**-.991*** (.433)	-.014 (.025)	.353 (.260)
	Asia	.010 (.027)	.376 (.385)	.041+ (.024)	.463+ (.249)
	Europe	-.058+ (.035)	**-1.182*** (.513)	-.063+ (.033)	-.406 (.249)
	Others	.087+ (.045)	**2.378*** (1.162)	.072 (.095)	-.190 (.484)
N		119	80	64	50
R^2 / R^2 adjusted		.190 / .115	.331 / .234	.391 / .277	.389 / .232
+ p < .1, * p < .05, ** p < .01, *** p < .001					

Table 9. OLS results (regression coefficients, robust standard errors in parantheses). For the region dummies, North America was used as basis.

Regarding the controls, firms headquartered in Europe and publicly listed vendors seem to be negatively associated with performance. Overall, the R^2 values can be considered quite good, especially for models (2) to (4).

6 Discussion

In our study, we wanted to examine which types of innovation intiatives – contributing to different dynamic capabilities for innovation – are raising an outsourcing vendor's financial performance.

The first hypothesis focused on the involvement of the external environment, related to Joshi et al.'s knowledge acquisition capability. The frequent occurrence of *Collaboration* initiatives in combination with their relatively balanced distribution among high-performing and low-performing firms indicates that these activities represent basic preconditions from a vendors' point of view but are not leading to comparatively higher growth rates in general. The regression results confirm that, with these activities, vendors cannot yield higher revenue growth than their competitors. As a result, *H1* is not supported.

Regarding the *Structures* dimension, i.e., innovation-enabling initiatives that contribute to the transformation capability (Joshi et al. 2010), we see a mixed picture. In the regression analysis, the variable is mostly insignificant though this kind of innovation programs tend to occur more often in high-performing companies than their average competitors. One explanation for this phenomenon lies in the nature of the regression approach, which requires the predictors to be unrelated. Since structural and employee-related innovation initiatives will likely overlap, this precondition is not necessarily fulfilled; in such a case, we receive a suppressor effect, and an actually significant relationship might become insignificant. We tested this explanation by removing the employee-oriented initiatives from the regressions equation; as a result, the *Structures* predictor became significant at least in model (3) and weakly significant ($p < .1$) in model (4). Overall, we do, however, see only weak indications that innovation-enabling structures contribute to above-average performance; i.e., as already argued regarding the *Collaboration* initiatives above, *Structures* also seem not to be a differentiator in the vendor market anymore.

Finally, the results show that the initiatives of the *Employees dimension* seem to be most promising since a positive and significant relationship can be observed in both the classification approach and the regression results (H3 mainly accepted). This is congruent with recent insights from the innovation management literature, which has identified and examined the concept of employee-driven innovation as an increasingly important success factor, particularly in digital innovation contexts (Bäckström and Lindberg 2018; Opland et al. 2020).

The evidence for the importance of employee-driven innovation approaches is even more intriguing since Meiser and Beimborn (2020), in their qualitative survey among outsourcing managers on the client side, showed that *those* consider them as least important when directly asked which innovation approaches their vendors should implement. Therefore, vendors are in a slightly uncomfortable situation to have to go through pathways that their customers do not necessarily value as such. However, clients seem to ultimately acknowledge the resulting innovations stemming from those broader innovation initiatives since vendors' revenue goes up. But, it might require vendors even more to show success stories and to convince their clients about the effectiveness of their most promising, i.e., employee-involving, innovation management approaches.

In conclusion, our results provide first quantitative indications regarding the impact of innovation initiatives and thus contribute an outcome-oriented finding to the vendor perspective of the 'innovation-through-outsourcing' literature. They also hint at the differential strategic roles of the three innovation-oriented dynamic capabilities framed by Joshi et al. (2010), though within an ITO/BPO vendors context only. Acquisition and (centrally structured) transformation capabilities are rather a must-have in this context while investing in employee networks and approaches that foster employee-driven innovation do strategically make a difference. Across our different performance metrics used, our results are mostly consistent but do not hold perfectly, i.e., the robustness of our findings is limited. Therefore, the findings must be considered with respect to the following limitations.

First, it cannot be ensured that our coding of the innovation initiatives is objectively valid but is the result of a, to some extent, subjective classification. Similarly, scholars might argue for a different grouping of the individual types of innovation programs. However, multiple researchers have worked on developing and revising the categorization and coding scheme over the last years. We also discussed earlier versions of it at workshops and conferences, and thus received external feedback that was included in the process of shaping the categorization scheme. Therefore, we would argue that the categorization is both solid and congruent with scholarly perceptions.

Next, the limited availability of data led to several challenges, forcing us to use revenue figures as sole measures for capturing financial performance. Of course, it would be more favorable to apply additional performance metrics to measure corporate success. In particular, relational firm performance figures, such as *return on equity* or *return on assets*, would be suited for the comparison of time-related data and are commonly used in research. Moreover, considering profitability-oriented measures would more completely cover the performance contribution of the innovation initiatives since they would also take the cost side into account. Unfortunately, our data did not allow for gathering such measures for a substantial number of firms in our sample. And, on the positive side, we also believe that using revenue as performance metric is more directly reflecting the market's perception on how the providers are doing. Growth in revenues reflects a firm's performance in the market and thus captures the perspective of the customers more directly than any profit metric or market valuation. Given that our study is on 'innovation through outsourcing' and thus eventually depending on the customer's perspective, vendors' revenue figures are the most appropriate and direct (financial) measure we can use.

Further, one might criticize the choice of analytical methods used. While both the regression and classification analyses represent two well-known and robust research approaches, especially, the determination of 'significance' levels in classification techniques has a subjective character. However, the concept of signicance itself is also increasingly questioned in regular inferential statistics. Therfore, we tried to be as transparent in reporting our statistical results as possible so that readers can make their own interpretations. Overall, quantitative research that partly uses archival data has strengths (no biased reporting, no common method bias, etc.) and weaknesses (low data availability or lower fit of available data with theoretical concepts under investigation). Our work led to first results regarding the value of innovation initiatives on the vendor side; given the weaknesses of purely statistical approaches, complementary studies that use qualitative methods will help substantiate, extend, and further detail our findings.

7 Conclusion

As mentioned in the beginning, our research is among the first that aims to explore the impact of outsourcing providers' different innovation enablers on firm performance. By analyzing a unique dataset comprising revenue data and innovation activities of global outsourcing vendors, we have performed two analytical approaches to examine the relationship between different types of innovation initiatives – theoretically framed as contributing to three dynamic innovation capabilities – and revenue growth. Our research suggests that certain innovation initiatives have the potential to impact firm performance positively. More precisely, we found *employee-oriented* innovation enablers (innovation platforms for employees, internal hackathons & workshops, research challenges, and employee coaching) to be most promising in terms of contributing to vendor's success in the market. Through these initiatives, the providers develop important capabilities that in turn help them differentiate in the highly competitive ITO and BPO market and gather above-normal turnover. On the other side, although *structural* approaches such as establishing a Center of Excellence or implementing innovation labs and engaging in R&D programs tend to be more popular among high-performing firms and are also more valued by clients (Meiser and Beimborn 2020), *Structural* innovation enablers do not seem to be the determining key driver for their success.

However, given our small sample size and several limitations, our results are insufficient to derive general implications regarding the impact of innovation initiatives on vendors' performance. Therefore, our findings should be seen as first insights regarding the financial evaluation of outsourcing providers'

innovation activities. To confirm our findings, future empirical work in the field of 'innovation through outsourcing' needs to create and utilize more comprehensive datasets comprising additional performance metrics. Thus, we will derive more robust and more detailed findings, increasing our understanding of what makes outsourcing vendors competitive in the digital era and which can both guide vendors to implement effective innovation management approaches and clients to select the most effective vendors for their outsourcing undertaking.

Appendix

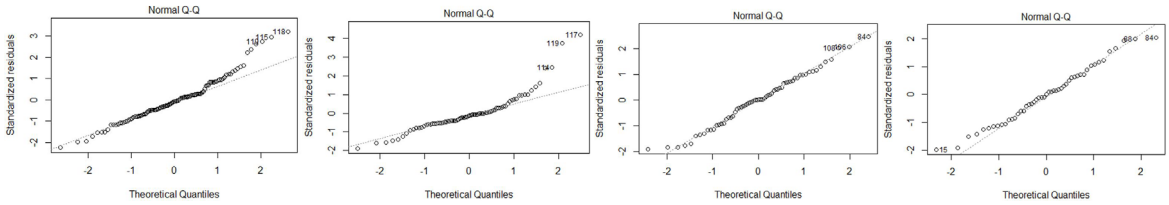


Figure 1: Q-Q Plots of the distribution of the dependent variables from the left to the right: AAG of outsourcing revenue, RG of outsourcing revenue, AAG of total revenue., RG of total revenue

	Outsourcing Revenues		**Total Revenues**	
Variables	**AAG**	**RG**	**AAG**	**RG**
collaboration	1.22	1.23	1.37	1.37
structures	1.38	1.36	1.48	1.49
employees	1.17	.12	1.29	1.30
size	1.63	1.67	1.46	1.32
public	1.63	1.66	1.34	1.22
Asia	1.17	1.17	1.19	1.15
others	1.21	1.31	1.11	1.22
Europe	1.14	.12	1.18	1.20

Table 10: VIF values for the different regression models

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