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Driving enterprise transformation: influence of organisational and geographical factors on business architecture efficacy

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ABSTRACT

This study investigates how organisational and geographical factors affect the efficacy of business architecture in enterprises. Employing a quantitative research methodology, the research analyses data from a diverse range of organisations using ordinal logistic regression. The findings validate the hypothesis that factors like organisational alignment, industry sector, geographic region, organisational size, and adoption duration significantly influence business architecture's maturity and strategic impact. The study contributes to the understanding of business architecture's role in organisational strategy, highlighting the importance of contextual factors. It suggests that business architecture strategies should be tailored to specific organisational contexts, offering valuable insights for policy formulation and organisational strategy development. This research provides a foundation for future studies and practical applications in business architecture and enterprise transformation, emphasizing the need for a nuanced approach considering different organisational and regional characteristics.

Introduction

The digital age has ushered in a plethora of opportunities and challenges for organisations, necessitating a re-evaluation of their strategic underpinnings. Central to this transformation is the role of business architecture, a discipline that offers a structured approach to aligning strategic initiatives with broader organisational goals (Henderson & Venkatraman, 1993). While the importance of business architecture is widely acknowledged, there remains a gap in the understanding of the various organisational factors that influence its perceived maturity and strategic impact (O'Higgins, 2023). Drawing upon recent findings in this domain, this research seeks to bridge this gap.

The discourse on business architecture has seen a surge in recent years, with scholars such as Ross, Weill, & Robertson (2006) and Tamm et al. (2015) diverging in their perspectives on its role and implications. On the one hand, proponents argue for its transformative potential, emphasizing the need to align business and IT strategies. Conversely, a more critical camp, including Porter (2008) and Teece (2007), underscores the challenges of achieving this alignment, particularly in the face of rapidly evolving technological landscapes. Amidst these ongoing discussions, our study is motivated by the need to empirically investigate the relationship between organisational factors and the outcomes of business architecture practices.

Guiding our investigation involves two pivotal research questions: Do various organisational factors, such as alignment, industry sector, geographic region, and size, predict the perceived maturity of business architecture? Do these factors influence the perceived strategic impact? To address these questions, we employ a quantitative research methodology that leverages a cross-sectional design

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to gather data from a diverse range of organisations (Bryman, 2016). This approach, rooted in rigorous empirical methods, facilitates a comprehensive exploration of the intricate dynamics at play.

This paper is organised as follows: after this introduction, we present a literature review, juxtaposing theoretical insights with empirical studies to illuminate the nexus between theory and practice. We then set out a detailed exposition of the research and methodology, and elucidates the rationale behind our methodological choices and their implications. The subsequent sections present the analysis and findings of the study, culminating in discussions that draw out the broader implications of our research. The paper concludes by distilling the key points, offering recommendations, and charting potential avenues for future research while also acknowledging the inherent limitations of our study.

Literature Review

We comprehensively reviewed the existing body of knowledge related to the alignment of business architecture with organisational strategies and how various factors influence this alignment. Our review is structured to present the theoretical and conceptual background, followed by an empirical review that links the hypotheses with empirical studies.

Theoretical and Conceptual Background

Business architecture, as a discipline, has evolved to bridge the gap between an organisation's business strategy and its execution (Ross, Weill, & Robertson, 2006). At its core, it seeks to align the organisation's strategic objectives with its capabilities, ensuring that the business operates efficiently and is poised for innovation (Teece, 2007). Henderson and Venkatraman (1993) posited that the strategic alignment between business and IT strategies is crucial for achieving competitive advantage. This alignment is not static; it evolves as the business environment changes, necessitating a dynamic capabilities perspective (Teece 2007).

Industry dynamics play a significant role in shaping business strategy. Porter's (2008) seminal work on industry forces underscores the importance of understanding these dynamics when crafting strategies. Owing to their unique characteristics, different industries may have varying degrees of alignment maturity and strategic impact from their business architecture practices (O'Higgins, 2023; Stahl et al., 2023).

Geographic nuances also influence business architecture. Rugman and Verbeke (2004) highlight the adaptability and flexibility of business architecture practices to cater to regional variations. In the age of globalization, understanding these regional variations becomes even more critical, as businesses seek to balance global strategies with local needs – a concept termed 'glocalization' (Kostiuk, 2021).

Organisational size, in terms of both revenue and employees, can influence the adoption and maturity of business architecture practices. Larger organisations might have more complex architectures but also more resources to invest in alignment practices (O'Higgins, 2023). However, Bidmeshk et al. (2021) suggest that the alignment between business and IS strategies is crucial for organisations of all sizes.

The duration of business architecture adoption can also influence the perceived maturity and strategic impact. Organisations that have invested time in refining and evolving their practices are likely to witness a more significant strategic impact from their business architecture (O'Higgins, 2023).

Empirical Review and Hypothesis Development

Drawing from the empirical evidence presented, we formulate hypotheses to investigate the relationship between various organisational factors and the perceived maturity and strategic impact of business architecture. The alignment of business architecture with organisational strategies, influenced by factors such as industry sector (Porter, 2008; O'Higgins, 2023; Stahl et al., 2023), geographic region (Rugman & Verbeke, 2004; Kostiuk, 2021), organisational size (O'Higgins, 2023; Bidmeshk et al., 2021), and years of adoption (O'Higgins, 2023), forms the crux of our research questions. Several empirical studies have explored the alignment between business and IS strategies. For instance, Chan, Sabherwal, & Thatcher (2006) delved into the influence of strategic planning on the development of shared knowledge and alignment. Their findings suggest that strategic planning plays a pivotal role in achieving alignment, which can subsequently influence the strategic impact of the business architecture. In a regulated entrepreneurial setting, Marcus & Cohen (2015) explored public policies and their influence on business strategies. While not directly related to business architecture, understanding the external regulatory environment is crucial for crafting aligned business strategies. In digital transformation, Stahl et al. (2023) proposed a maturity model for the transition towards data-driven business models. Their approach, while not directly focused on business architecture, provides a framework that can be applied to understand the maturity and strategic impact of business architecture practices.

The literature demonstrates the inherently multifaceted nature of business architecture and its alignment with organisational strategies. Various factors, both internal and external to the organisation, influence this alignment. As businesses operate in an increasingly complex and dynamic environment, understanding these factors and their interplay becomes crucial for achieving strategic objectives. This literature review sets the stage for our investigation, providing a robust foundation for our research questions and hypotheses.

To guide this investigation, we have formulated the following research questions and corresponding hypotheses:

Research Question 1 (RQ1): Do Organisational Alignment (Alignment), Industry Sector (Industry), Geographic Region (Region), Organisational Size measured by Revenue (Size_Rev), Organisational Size measured by Employees (Size_Emp), and Years of Adoption (Adoption) significantly predict perceived Maturity (Maturity) of Business Architecture?

H0: Organisational Alignment (Alignment), Industry Sector (Industry), Geographic Region (Region), Organisational Size measured by Revenue (Size_Rev), Organisational Size measured by Employees (Size_Emp), and Years of Adoption (Adoption) do not significantly predict perceived Maturity (Maturity) of Business Architecture.

Ha: Organisational Alignment (Alignment), Industry Sector (Industry), Geographic Region (Region), Organisational Size measured by Revenue (Size_Rev), Organisational Size measured by Employees (Size_Emp), and Years of Adoption (Adoption) do significantly predict perceived Maturity (Maturity) of Business Architecture.

Research Question 2 (RQ2): Do Organisational Alignment (Alignment), Industry Sector (Industry), Geographic Region (Region), Organisational Size measured by Revenue (Size_Rev), Organisational Size measured by Employees (Size_Emp), and Years of Adoption (Adoption) significantly predict the perceived Strategic Impact (Impact) of Business Architecture?

H0: Organisational Alignment (Alignment), Industry Sector (Industry), Geographic Region (Region), Organisational Size measured by Revenue (Size_Rev), Organisational Size measured by Employees (Size_Emp), and Years of Adoption (Adoption) do not significantly predict perceived Strategic Impact (Impact) of Business Architecture.

Ha: Organisational Alignment (Alignment), Industry Sector (Industry), Geographic Region (Region), Organisational Size measured by Revenue (Size_Rev), Organisational Size measured by Employees (Size_Emp), and Years of Adoption (Adoption) do significantly predict perceived Strategic Impact (Impact) of Business Architecture.

Research and Methodology

The decision to employ a quantitative research methodology was driven by the objective to conduct a comprehensive and systematic exploration of the relationship between organisational factors and the outcomes of business architecture practices, expressed as maturity and strategic impact (Creswell, 2014). This methodological approach facilitates the systematic collection and analysis of quantifiable data, thereby providing a rigorous, empirically driven investigative approach (Bryman, 2016).

Research Context

In this study, a cross-sectional quantitative research design was adopted to investigate the relationship between organisational factors and the maturity and strategic impact of business architecture practices (Bryman, 2016). A cross-sectional design enables the collection of data from a diverse range of organisations at a single point in time, providing an assessment of the current state of business architecture practices across various contexts (Creswell, 2014). The use of a quantitative research design allows for the systematic collection and analysis of numerical data, thereby facilitating a comprehensive understanding of the influence of organisational factors on business architecture maturity and strategic impact (Bryman, 2016). The quantitative methods employed enable the exploration of statistically significant relationships and associations between variables, thereby allowing for the drawing of meaningful conclusions based on empirical evidence (Field, 2013).

Measurement and Research Instrument

The survey instrument was designed to elicit quantitative responses, enabling the collection of numerical data on the variables of interest (Field, 2013). The survey questions were meticulously crafted to ensure clarity and relevance, and a pilot test was conducted to refine the instrument and ensure the validity and reliability of the data collected (Creswell, 2014). This calibration was conducted with participation from a fellow academic specialising in quantitative methods and a business architecture industry practitioner with experience in quantitative academic research (Bryman, 2016).

The survey asked respondents to provide information about their organisation's attributes including their organisation's name, structural organisational alignment and reporting line of Business Architecture, geographic regional location of their principal operations (headquarters), size of organisation measured by revenue and number of employees and the length of time they have been applying business architecture practices. Respondents were also asked to select the maturity and strategic impact of business architecture practices in their organisation (Field, 2013). Table 1 provides details of the survey parameters for each survey item.

Table 1: Survey Instrument Parameters

Factor	Reference	Description	Permitted parameters
Organisational Alignment	ALIGNMENT	Organisational reporting line for Business Architecture	IT or Business Reporting Line
Geographic Region	REGION	Geographic region of principal operations (headquarters)	North America, EMEA or APAC
Organisation Size (Revenue)	REV_SIZE	Organisation size measured by revenue (USD)	$0 - $100m, $100m - $1bn or $1bn+
Organisation Size (Employees)	EMP_SIZE	Organisation size measured by employees	0 - 249, 250 - 9,999 or 10,000+
Business Architecture Adoption	ADOPTION	Number of years the organisation has formally adopted business architecture practices	< 3 years, 3 - 5 years or 5 years +
Business Architecture Maturity	MATURITY	Level of Maturity on the Business Architecture Maturity Model framework	L1 (Initial), L2 (Defined), L3 (Repeatable), L4 (Managed) or L5 (Optimised)
Business Architecture Strategic Impact	STRAT_IMPACT	Extent Business Architecture practices are perceived to create strategic impact	5-point Likert-scale (Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)

Data Collection and Sampling

Data was collected through an online survey administered via the SurveyMonkey platform. A convenience sampling approach was employed to select the sample of organisations (Bryman, 2016). While acknowledging that a convenience sampling approach may limit the generalisability of the findings to the broader population, it facilitated the efficient collection of data from a diverse range of organisations with different characteristics and contexts that are actively engaged in Business Architecture related domains (Creswell, 2014). Respondents were approached either via direct message or forum post. Direct messages were sent to Business Architecture practitioners within the researchers' own professional network on LinkedIn. Forum posts inviting participation were also posted into relevant interest groups on the LinkedIn platform. These interest groups included those focused directly on Business Architecture as well as adjacent domains such as Enterprise Architecture, Strategy Execution, Transformation and Technology. Additionally, professional members of the Business Architecture Guild who were engaged in the Guild's online forum were also invited to participate. Data was collected on an anonymous basis to provide respondents with the ability to provide an honest appraisal of both maturity and strategic impact. Although, the name of the respondent's organisation was also collected; this was solely used for screening purposes (Bryman, 2016).

Ethical Considerations

Respondents were informed about the purpose of the research, the nature of their participation, the intended use of the information they provided, and the measures taken to protect their data and privacy before they consented to participate in the study (Resnik, 2015). This transparency aimed to ensure that participants were making an informed decision to participate in the study. Data was collected on an anonymous basis. While we collected the name of the respondent's organisation, this was for screening purposes only. No personally identifiable information was gathered, such as names or contact details. The organisation's name was only used in screening to avoid bias and distortion of our data. It was not used in any way that would compromise the anonymity of the respondents. Moreover, data was stored securely and only accessible to the research team to further uphold confidentiality (Resnik, 2015). Our research protocol was reviewed and received ethical approval prior to commencement, ensuring that we complied with the guidelines for research involving human participants. This review considered the ethical implications of our research design, data collection methods, data analysis techniques, and dissemination plans (Resnik, 2015). We acknowledged and accounted for potential bias in our sample due to our convenience sampling approach. We have made clear in our reporting that the results may not be representative of all organisations and therefore may limit the generalisability of our findings.

Analysis and Findings

Our data was extracted from SurveyMonkey in comma-separated variable (.csv) format and loaded into IBM SPSS version 28.0.1.0 for further data preparation and analysis. We reviewed the dataset (n=145) for completeness and found all fields (100%) were complete with a valid input parameter based on Table 1. We then reviewed the data for bias and distortion by examining the count of unique organisations in the dataset. We found no duplicates in the data based on this analysis. An additional visual inspection was undertaken by the research team to identify known permeations, abbreviations, or other derivatives of an entity. This inspection confirmed that each respondent represented a unique organisation. Subsequently we performed further data preparation by transposing the raw data into a logical or ordinal scale to facilitate our logistic regression analysis in SPSS.

Descriptive Statistical Analysis

Frequencies and percentages were calculated for INDUSTRY, REGION, ADOPTION, REV_SIZE, EMP_SIZE, ALIGNMENT, MATURITY, and STRAT_IMPACT. The most frequently observed category of INDUSTRY was Financial Services (n = 51, 35.17%). The most frequently observed category of REGION was Europe, Middle East & Africa (n = 74, 51.03%). The most frequently observed category of ADOPTION was Less than 3 years (n = 73, 50.34%). The most frequently observed category of REV_SIZE was 1bn or more (n = 57, 39.31%). The most frequently observed category of EMP_SIZE was 250 - 9,999 (n = 66, 45.52%). The most frequently observed category of ALIGNMENT was IT Reporting Line (n = 84, 57.93%). The most frequently observed category of MATURITY was Level 2 (Defined) (n = 63, 43.45%). The most frequently observed category of STRAT_IMPACT was Agree (n = 51, 35.17%). Frequencies and percentages are presented in Table 2.

Table 2: Frequency Table for Nominal and Ordinal Variables

Variable	n	%
INDUSTRY		
Public Service	23	15.86
Financial Services	51	35.17
Technology	18	12.41
Industrial, Engineering & Utilities	12	8.28
Retail & Consumer	22	15.17
Professional Services	14	9.66
Missing	5	3.45
REGION		
Europe, Middle East & Africa	74	51.03
Asia Pacific	19	13.10
America	52	35.86
Missing	0	0.00
ADOPTION		
Less than 3 years	73	50.34
3 to 5 years	23	15.86
5 or more years	49	33.79
Missing	0	0.00
REV_SIZE		
0 - 100m	40	27.59
100m - 1bn	48	33.10
1bn or more	57	39.31
Missing	0	0.00
EMP_SIZE		
0 - 249	25	17.24
250 - 9,999	66	45.52
10,000 or more	54	37.24
Missing	0	0.00
ALIGNMENT		
Other Reporting Line	61	42.07
IT Reporting Line	84	57.93
Missing	0	0.00
MATURITY		
Level 1 (Initial)	41	28.28
Level 2 (Defined)	63	43.45
Level 3 (Repeatable)	24	16.55
Level 4 (Managed)	6	4.14
Level 5 (Optimised)	11	7.59
Missing	0	0.00
STRAT_IMPACT		
Strongly Disagree	6	4.14
Disagree	9	6.21
Neutral	38	26.21
Agree	51	35.17
Strongly Agree	41	28.28
Missing	0	0.00

Note. Due to rounding errors, percentages may not equal 100%.

Ordinal Logistic Regression Analysis for Maturity

An Ordinal Logistic Regression was conducted to determine if the odds of observing each response category of MATURITY could be explained by the variation in INDUSTRY, REGION, ADOPTION, ALIGNMENT, EMP_SIZE, and REV_SIZE.

Assumptions

Variance inflation factors

Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. High VIFs indicate increased effects of multicollinearity in the model. VIFs greater than 5 are cause for concern, whereas VIFs of 10 should be considered the maximum upper limit (Menard, 2010). All predictors in the regression model have VIFs less than 10. Table 3 presents the VIF for each predictor in the model.

Table 3: Variance Inflation Factors

Variable	VIF
INDUSTRY	1.65
REGION	1.18
ADOPTION	1.36
ALIGNMENT	1.09
EMP_SIZE	2.91
REV_SIZE	2.76

Results

The model was evaluated based on an alpha of .05. The results of the model were significant, $\chi2(14) = 76.30$, $p < .001$, suggesting the observed effects of INDUSTRY, REGION, ADOPTION, ALIGNMENT, EMP_SIZE, and REV_SIZE on MATURITY were unlikely to occur under the null hypothesis. Therefore, the null hypothesis can be rejected. McFadden's R-squared was calculated to examine the model fit, where values greater than .2 are indicative of models with excellent fit (Louviere et al., 2000). The McFadden R-squared value calculated for this model was 0.20.

Coefficients

The regression coefficient for the Financial Services category of INDUSTRY was not significant, $B = 0.53$, $\chi2 = 1.06$, $p = .303$, suggesting that observing the Financial Services category of INDUSTRY did not have a significant effect on the odds of observing a higher category of MATURITY by 70.62% relative to the Public Services category of INDUSTRY. The regression coefficient for the Technology category of INDUSTRY was not significant, $B = 0.66$, $\chi2 = 1.10$, $p = .294$, suggesting that observing the Technology category of INDUSTRY did not have a significant effect on the odds of observing a higher category of MATURITY by 94.45% relative to the Public Services category of INDUSTRY. The regression coefficient for the Industrial, Engineering & Utilities category of INDUSTRY was not significant, $B = -0.59$, $\chi2 = 0.64$, $p = .425$, suggesting that observing the Industrial, Engineering & Utilities category of INDUSTRY did not have a significant effect on the odds of observing a higher category of MATURITY by 44.47% relative to the Public Services category of INDUSTRY. The regression coefficient for the Retail & Consumer category of INDUSTRY was not significant, $B = 0.35$, $\chi2 = 0.35$, $p = .556$, suggesting that observing the Retail & Consumer category of INDUSTRY did not have a significant effect on the odds of observing a higher category of MATURITY by 42.57% relative to the Public Services category of INDUSTRY. The regression coefficient for the Professional Services category of INDUSTRY was significant, $B = 1.68$, $\chi2 = 5.07$, $p = .024$, suggesting that observing the Professional Services of category INDUSTRY would increase the odds of observing a higher category of MATURITY by 435.38% relative to the Public Services category of INDUSTRY.

The regression coefficient for the Asia Pacific category of REGION was not significant, $B = -0.92$, $\chi2 = 2.89$, $p = .089$, suggesting that observing the Asia Pacific category of REGION did not have a significant effect on the odds of observing a higher category of MATURITY by 59.98% relative to the Europe, Middle East & Africa category of REGION. The regression coefficient for the America category of REGION was significant, $B = -0.84$, $\chi2 = 5.05$, $p = .025$, suggesting that observing the America of category REGION would decrease the odds of observing a higher category of MATURITY by 56.67% relative to the Europe, Middle East & Africa category of REGION.

The regression coefficient for the 3 to 5 years category of ADOPTION was significant, $B = 1.25$, $\chi2 = 5.61$, $p = .018$, suggesting that observing the 3 to 5 years of category ADOPTION would increase the odds of observing a higher category of MATURITY by 250.58% relative to the Less than 3 years category of ADOPTION. The regression coefficient for the 5 or more years category of ADOPTION was significant, $B = 3.32$, $\chi2 = 44.04$, $p < .001$, suggesting that observing the 5 or more years of category ADOPTION would increase the odds of observing a higher category of MATURITY by 2,663.66% relative to the Less than 3 years category of ADOPTION.

The regression coefficient for the IT Reporting Line category of ALIGNMENT was not significant, B = 0.32, $\chi2$ = 0.86, p = .354, suggesting that observing the IT Reporting Line category of ALIGNMENT did not have a significant effect on the odds of observing a higher category of MATURITY by 37.86% relative to the Other Reporting Line category of ALIGNMENT.

The regression coefficient for the 250 - 9,999 category of EMP_SIZE was not significant, B = -0.32, $\chi2$ = 0.28, p = .597, suggesting that observing the 250 - 9,999 category of EMP_SIZE did not have a significant effect on the odds of observing a higher category of MATURITY by 27.36% relative to the 0 - 249 category of EMP_SIZE. The regression coefficient for the 10,000 or more category of EMP_SIZE was not significant, B = -0.88, $\chi2$ = 1.61, p = .205, suggesting that observing the 10,000 or more category of EMP_SIZE did not have a significant effect on the odds of observing a higher category of MATURITY by 58.44% relative to the 0 - 249 category of EMP_SIZE.

The regression coefficient for the 100m - 1bn category of REV_SIZE was not significant, B = 0.58, $\chi2$ = 1.16, p = .281, suggesting that observing the 100m - 1bn category of REV_SIZE did not have a significant effect on the odds of observing a higher category of MATURITY by 79.49% relative to the 0 - 100m category of REV_SIZE. The regression coefficient for the 1bn or more category of REV_SIZE was significant, B = 1.30, $\chi2$ = 4.43, p = .035, suggesting that observing the 1bn or more of category REV_SIZE would increase the odds of observing a higher category of MATURITY by 268.47% relative to the 0 - 100m category of REV_SIZE. Table 4 summarizes the results of the ordinal regression model for predicting Maturity.

Table 4: Ordinal Logistic Regression Results

Predictor	B	SE	$\chi2$	p	OR	95.00% CI
(Intercept):1	0.29	0.70	0.17	.679	-	-
(Intercept):2	3.19	0.78	16.79	< .001	-	-
(Intercept):3	4.68	0.84	31.21	< .001	-	-
(Intercept):4	5.31	0.87	37.45	< .001	-	-
INDUSTRYFinancial Services	0.53	0.52	1.06	.303	1.71	[0.62, 4.72]
INDUSTRYTechnology	0.66	0.63	1.10	.294	1.94	[0.56, 6.73]
INDUSTRYIndustrial, Engineering & Utilities	-0.59	0.74	0.64	.425	0.56	[0.13, 2.35]
INDUSTRYRetail & Consumer	0.35	0.60	0.35	.556	1.43	[0.44, 4.64]
INDUSTRYProfessional Services	1.68	0.75	5.07	.024	5.35	[1.24, 23.08]
REGIONAsia Pacific	-0.92	0.54	2.89	.089	0.40	[0.14, 1.15]
REGIONAmerica	-0.84	0.37	5.05	.025	0.43	[0.21, 0.90]
ADOPTION3 to 5 years	1.25	0.53	5.61	.018	3.51	[1.24, 9.90]
ADOPTION5 or more years	3.32	0.50	44.04	< .001	27.64	[10.37, 73.66]
ALIGNMENTIT Reporting Line	0.32	0.35	0.86	.354	1.38	[0.70, 2.72]
EMP_SIZE250 - 9,999	-0.32	0.60	0.28	.597	0.73	[0.22, 2.38]
EMP_SIZE10,000 or more	-0.88	0.69	1.61	.205	0.42	[0.11, 1.62]
REV_SIZE100m - 1bn	0.58	0.54	1.16	.281	1.79	[0.62, 5.19]
REV_SIZE1bn or more	1.30	0.62	4.43	.035	3.68	[1.09, 12.42]

Ordinal Logistic Regression Analysis for Strategic Impact

An Ordinal Logistic Regression was conducted to determine if the odds of observing each response category of STRAT_IMPACT could be explained by the variation in INDUSTRY, REGION, ADOPTION, ALIGNMENT, EMP_SIZE, and REV_SIZE.

Assumptions

Variance inflation factors

Variance Inflation Factors (VIFs) were calculated to detect the presence of multicollinearity between predictors. High VIFs indicate increased effects of multicollinearity in the model. VIFs greater than 5 are cause for concern, whereas VIFs of 10 should be considered the maximum upper limit (Menard, 2010). All predictors in the regression model have VIFs less than 10. Table 5 presents the VIF for each predictor in the model.

Table 5: Variance Inflation Factors

Variable	VIF
INDUSTRY	1.65
REGION	1.18
ADOPTION	1.36
ALIGNMENT	1.09
EMP_SIZE	2.91
REV_SIZE	2.76

Results

The model was evaluated based on an alpha of .05. The results of the model were significant, $\chi2(14) = 26.87$, $p = .020$, suggesting the observed effects of INDUSTRY, REGION, ADOPTION, ALIGNMENT, EMP_SIZE, and REV_SIZE on STRAT_IMPACT were unlikely to occur under the null hypothesis. Therefore, the null hypothesis can be rejected. McFadden's R-squared was calculated to examine the model fit, where values greater than .2 are indicative of models with excellent fit (Louviere et al., 2000). The McFadden R-squared value calculated for this model was 0.07.

Coefficients

The regression coefficient for the Financial Services category of INDUSTRY was not significant, $B = 0.28$, $\chi2 = 0.33$, $p = .569$, suggesting that observing the Financial Services category of INDUSTRY did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 31.81% relative to the Public Services category of INDUSTRY. The regression coefficient for the Technology category of INDUSTRY was significant, $B = 1.84$, $\chi2 = 8.51$, $p = .004$, suggesting that observing the Technology of category INDUSTRY would increase the odds of observing a higher category of STRAT_IMPACT by 528.31% relative to the Public Services category of INDUSTRY. The regression coefficient for the Industrial, Engineering & Utilities category of INDUSTRY was not significant, $B = 1.32$, $\chi2 = 3.61$, $p = .058$, suggesting that observing the Industrial, Engineering & Utilities category of INDUSTRY did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 272.64% relative to the Public Services category of INDUSTRY. The regression coefficient for the Retail & Consumer category of INDUSTRY was significant, $B = 1.67$, $\chi2 = 8.01$, $p = .005$, suggesting that observing the Retail & Consumer of category INDUSTRY would increase the odds of observing a higher category of STRAT_IMPACT by 429.00% relative to the Public Services category of INDUSTRY. The regression coefficient for the Professional Services category of INDUSTRY was not significant, $B = 0.84$, $\chi2 = 1.42$, $p = .234$, suggesting that observing the Professional Services category of INDUSTRY did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 131.83% relative to the Public Services category of INDUSTRY.

The regression coefficient for the Asia Pacific category of REGION was not significant, $B = -0.09$, $\chi2 = 0.03$, $p = .857$, suggesting that observing the Asia Pacific category of REGION did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 8.68% relative to the Europe, Middle East & Africa category of REGION. The regression coefficient for the America category of REGION was not significant, $B = -0.009$, $\chi2 = 0.00$, $p = .981$, suggesting that observing the America category of REGION did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 0.85% relative to the Europe, Middle East & Africa category of REGION.

The regression coefficient for the 3 to 5 years category of ADOPTION was not significant, $B = -0.13$, $\chi2 = 0.07$, $p = .791$, suggesting that observing the 3 to 5 years category of ADOPTION did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 12.01% relative to the Less than 3 years category of ADOPTION. The regression coefficient for the 5 or more years category of ADOPTION was significant, $B = 0.78$, $\chi2 = 4.06$, $p = .044$, suggesting that observing the 5 or more years of category ADOPTION would increase the odds of observing a higher category of STRAT_IMPACT by 117.87% relative to the Less than 3 years category of ADOPTION.

The regression coefficient for the IT Reporting Line category of ALIGNMENT was not significant, $B = -0.11$, $\chi2 = 0.10$, $p = .746$, suggesting that observing the IT Reporting Line category of ALIGNMENT did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 10.12% relative to the Other Reporting Line category of ALIGNMENT.

The regression coefficient for the 250 - 9,999 category of EMP_SIZE was not significant, $B = -0.34$, $\chi2 = 0.35$, $p = .552$, suggesting that observing the 250 - 9,999 category of EMP_SIZE did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 28.85% relative to the 0 - 249 category of EMP_SIZE. The regression coefficient for the 10,000 or more category of EMP_SIZE was not significant, $B = -0.91$, $\chi2 = 1.97$, $p = .160$, suggesting that observing the 10,000 or more category of

EMP_SIZE did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 59.90% relative to the 0 - 249 category of EMP_SIZE.

The regression coefficient for the 100m - 1bn category of REV_SIZE was not significant, B = 0.86, $\chi2$ = 2.82, p = .093, suggesting that observing the 100m - 1bn category of REV_SIZE did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 135.17% relative to the 0 - 100m category of REV_SIZE. The regression coefficient for the 1bn or more category of REV_SIZE was not significant, B = 0.54, $\chi2$ = 0.92, p = .337, suggesting that observing the 1bn or more category of REV_SIZE did not have a significant effect on the odds of observing a higher category of STRAT_IMPACT by 71.56% relative to the 0 - 100m category of REV_SIZE. Table 6 summarizes the results of the ordinal regression model.

Table 6: Ordinal Logistic Regression Results

Predictor	B	SE	$\chi2$	p	OR	95.00% CI
(Intercept):1	-2.47	0.76	10.58	.001	-	-
(Intercept):2	-1.64	0.70	5.49	.019	-	-
(Intercept):3	0.23	0.67	0.12	.732	-	-
(Intercept):4	1.98	0.69	8.15	.004	-	-
INDUSTRYFinancial Services	0.28	0.48	0.33	.569	1.32	[0.51, 3.41]
INDUSTRYTechnology	1.84	0.63	8.51	.004	6.28	[1.83, 21.61]
INDUSTRYIndustrial, Engineering & Utilities	1.32	0.69	3.61	.058	3.73	[0.96, 14.48]
INDUSTRYRetail & Consumer	1.67	0.59	8.01	.005	5.29	[1.67, 16.77]
INDUSTRYProfessional Services	0.84	0.71	1.42	.234	2.32	[0.58, 9.26]
REGIONAsia Pacific	-0.09	0.50	0.03	.857	0.91	[0.34, 2.45]
REGIONAmerica	-0.009	0.36	0.00	.981	0.99	[0.49, 1.99]
ADOPTION3 to 5 years	-0.13	0.48	0.07	.791	0.88	[0.34, 2.26]
ADOPTION5 or more years	0.78	0.39	4.06	.044	2.18	[1.02, 4.65]
ALIGNMENTIT Reporting Line	-0.11	0.33	0.10	.746	0.90	[0.47, 1.72]
EMP_SIZE250 - 9,999	-0.34	0.57	0.35	.552	0.71	[0.23, 2.19]
EMP_SIZE10,000 or more	-0.91	0.65	1.97	.160	0.40	[0.11, 1.44]
REV_SIZE100m - 1bn	0.86	0.51	2.82	.093	2.35	[0.87, 6.38]
REV_SIZE1bn or more	0.54	0.56	0.92	.337	1.72	[0.57, 5.17]

Discussion

In this critical discussion, we undertake a rigorous examination of our two principal research questions that probe the multifaceted dimensions influencing business architecture in contemporary organisations. We explore how Organisational Alignment, Industry Sector, Geographic Region, Organisational Size (measured by Revenue and Employees), and Years of Adoption collectively shape the perceived Maturity and Strategic Impact of Business Architecture. This analysis will provide a deeper, theoretical exploration to understand the complexities and interdependencies within the development and strategic efficacy of business architecture. Our aim is to provide a nuanced, academically enriched perspective that underscores the dynamic interplay of these factors in the evolving landscape of organisational strategy and structure.

Maturity of Business Architecture Practices

In Research Question 1 we sought to investigate the predictive relationship between various organisational factors and the perceived maturity of business architecture. The findings, derived from an ordinal logistic regression analysis, provide the basis for a nuanced and insightful understanding of business architecture in practice.

Industry Sector (INDUSTRY)

Among the range of industry sectors analysed, only the Professional Services sector exhibited a statistically significant effect on business architecture maturity. Specifically, being in the Professional Services sector increases the odds of observing a higher category of maturity by 435.38% relative to the Public Services sector (B = 1.68, $\chi2$ = 5.07, p = .024). Whilst other industry sectors, including Financial Services, Technology, Industrial, Engineering & Utilities, and Retail & Consumer, did not show a significant predictive relationship with maturity.

The distinctive impact of the Professional Services sector on business architecture maturity clearly warrants further attention and implies the potential for a unique set of practices or structural dynamics within this sector that facilitates advanced maturity. This could be attributed to the nature of professional services, which often demands high levels of process sophistication and strategic planning. In many cases, organisations operating in professional services, are also instrumental in advising other organisations on topics such as strategy, digital transformation, and performance management. When seen through this lens, it might be expected for such organisations to demonstrate higher levels of maturity (Reinartz et al., 2019).

However, the lack of similar significance in other sectors, such as Technology or Financial Services, does raise questions about the presence of sector-specific challenges and the suitability of the maturity criteria being applied. This observation highlights the need for more in-depth research into the unique challenges that different industries face during digital transformation initiatives. It also underscores the potential value of developing industry-specific maturity models that can better capture the nuances of each sector's transformation journey. This notion of industry-specific maturity models aligns with the work of authors like Sambamurthy & Zmud (2000), who emphasized the importance of sector-specific IT capabilities. It also resonates with the findings of Kutnjak et al. (2019), as their literature review of digital transformation case studies across industries suggests that there might indeed be substantial variations in how digital maturity is manifested and achieved in different sectors.

Geographic Region (REGION)

Our analysis revealed a significant effect for the America's region, showing organisations in the America's are much less likely to achieve higher maturity levels compared to those in Europe, Middle East & Africa, with a decrease in the odds of observing higher maturity by 56.67% ($B = -0.84$, $\chi2 = 5.05$, $p = .025$). However, the Asia Pacific region's impact on maturity levels was not statistically significant in our analysis, which raises questions about the factors influencing organisational maturity in this diverse and rapidly developing region.

The lack of significant findings in the APAC region potentially warrants a more nuanced examination. This region's vast diversity in economic development, cultural practices, and business strategies might indicate a more heterogeneous landscape in terms of organisational maturity. This diversity could potentially mask underlying trends or specific regional strengths and weaknesses in business architecture and technology development that are not immediately apparent. Similarly, our finding that organisations headquartered in the America's are less likely to achieve higher maturity levels compared to their counterparts in EMEA is intriguing and it directly challenges the often-held assumption that American organisations are at the forefront in terms of business architecture and technology development. In his seminal work on the analysis of cultural dimensions in business Hofstede (2001) discussed the significance of cultural and geographical factors in driving vastly different business practices and resource allocation strategies. Furthermore, Rugman & Verbeke (2004) emphasizes that the choice of regional strategies can significantly affect the international operations of firms, potentially influencing their digital maturity. Whilst consistent with the literature, our findings demonstrate a clear need for a more detailed exploration into how regional factors, influence business architecture practices and the specific antecedents of maturity in a geographical context.

Years of Adoption (ADOPTION)

The length of time since an organisation began adopting business architecture practices has emerged as a significant predictor of business architecture maturity. Specifically, our findings reveal adoption periods of 5 or more years dramatically increase the odds of observing a higher category of maturity by 2,663.66% relative to adoption periods of less than 3 years ($B = 3.32$, $\chi2 = 44.04$, $p < .001$). Organisations practicing business architecture for between 3 to 5 years also showed a significant positive effect, increasing the odds by 250.58% ($B = 1.25$, $\chi2 = 5.61$, $p = .018$). Our findings align with the theoretical perspective that maturity in business architecture develops over time through accumulated experience and refinement of practices (Levitt & March, 1988) and demonstrates significant similarities with adjacent practices, such as business process management, as demonstrated in Tarafdar & Gordon's (2007) longitudinal studies (recent REF).

Moreover, our research underscores the importance of a sustained commitment to business architecture and should serve as a critical consideration for organisations in the early stages of adoption of business architecture practices. When developing and justifying the case for investment in business architecture, it should take account of value over the long-term, which should be at least 5 years. This is likely to be challenging for many organisations where their investment portfolio may be oriented towards shorter horizons for the evaluation of return on investment (Puthenpurackal Chakko, Huygh, & De Haes, 2021).

Organisational Alignment (ALIGNMENT)

While exploring the various factors that influence the maturity of business architecture within organisations, one intriguing finding emerged: the specific reporting line of business architecture, particularly whether it falls within the IT organisation or elsewhere in the enterprise, did not significantly predict the level of maturity ($B = 0.32$, $\chi2 = 0.86$, $p = .354$). This unexpected result challenges conventional assumptions about the organisational placement of business architecture.

In many organisations, business architecture is traditionally viewed as a function of enterprise architecture and is often aligned with the IT organisation (Ross, Weill, & Robertson, 2006). However, our findings suggest that the practice and investment in business architecture are the most significant factors, regardless of its reporting structure. In other words, it's not where business architecture resides on the organisational chart that matters most; it's the commitment to the discipline itself. This insight underscores the notion that business architecture should not be confined to a specific organisational silo. Instead, organisations should prioritize the development and implementation of effective business architecture practices, focusing on aligning business strategies, processes, and technology (Wright et al., 2015). The true value of business architecture lies in its ability to bridge the gap between strategy and execution, regardless of its formal reporting line. This finding invites leaders to reconsider their approach to business architecture and encourages a broader perspective that places emphasis on the practice and investment into this critical discipline, recognizing its

potential to drive alignment, innovation, and organisational success beyond the confines of traditional reporting structures (Schekkerman, 2009).

Organisational Size by Employees (EMP_SIZE) and Revenue (REV_SIZE)

Neither employee size categories ("250 - 9,999" and "10,000 or more") nor revenue size categories ("100m - 1bn" and "1bn or more") showed a significant effect on the maturity of business architecture. The only exception was for organisations with a revenue size of "1bn or more," which were found to be more likely to have higher maturity levels ($B = 1.30$, $\chi 2 = 4.43$, $p = .035$). Our findings challenge the assumption that larger organisations or those with more extensive resources are naturally more mature in their business architecture practices. While it remains true that larger organisations have more extensive resources and, therefore, greater maturity potential, our results indicate that other factors, such as resource allocation and strategic commitment, also play pivotal roles in converting this potential into tangible results (Collis & Montgomery, 2008). Our finding underscores the importance of the Business Architecture leaders in building a compelling vision and roadmap for the business architecture practice. Simultaneous, the Business Architecture Leader must be adept at stakeholder management to effectively engage senior leaders in their vision to gain sponsorship of the practice of business architecture in the enterprise, whilst also maintaining effective communication and buy-in over a sustained time horizon (>5 years) to successfully mature the business architecture practice.

Strategic Impact

In Research Question 2, we sought to explore the role of the same factors on the perceived Strategic Impact of Business Architecture, providing valuable insights into the intricate interplay between organisational attributes and the strategic positioning of the discipline.

Organisational Alignment (Alignment)

A salient observation emerges in the context of Organisational Alignment, particularly regarding the reporting structure of Business Architecture. Surprisingly, this factor fails to exhibit a statistically significant effect on the perceived Strategic Impact. This outcome challenges the conventional wisdom that effective alignment, especially within the IT organisation, is a linchpin for achieving strategic success through Business Architecture (Ross, Weill, & Robertson, 2006). Instead, our findings suggest that the significance of Business Architecture in driving strategic impact transcends traditional organisational silos and reporting structures. Regardless of its formal placement, the unwavering commitment to the practice of Business Architecture emerges as the primary driver. This underscores the discipline's unique ability to bridge the gap between strategic intent and its successful execution (Schekkerman, 2009) and is also consistent with our findings for maturing the business architecture discipline with an enterprise.

Industry Sector (Industry)

Echoing the patterns observed in Research Question 1, the Industry Sector continues to reveal sector-specific idiosyncrasies in predicting the Strategic Impact of Business Architecture. Notably, the Professional Services sector maintains its prominence by exhibiting a statistically significant effect on Strategic Impact. This reaffirms the pivotal role of this sector in achieving advanced maturity and leveraging Business Architecture for strategic advantage (Reinartz et al., 2019). However, like with maturity, the story is different for sectors such as Technology and Financial Services, where no statistically significant relationships with Strategic Impact are discerned. These nuanced findings accentuate the importance of recognizing sector-specific challenges and opportunities when harnessing Business Architecture for strategic purposes. It underscores the necessity for tailored strategies, sector-specific maturity models, and a deeper exploration of how distinct industries navigate their transformation journeys (Sambamurthy & Zmud, 2000; Kutnjak et al., 2019).

Geographic Region (Region)

Our analysis of the influence of Geographic Region on Strategic Impact, further underscores the intriguing dynamics observed for business architecture maturity. The Americas emerge as less likely to achieve higher Strategic Impact compared to the Europe, Middle East & Africa region, with a noteworthy decrease in the odds of observing higher impact. This result continues to challenge conventional assumptions about the dominance of American organisations in the field of Business Architecture and technology development. It also emphasizes the significance of cultural and geographical factors in shaping diverse business practices and resource allocation strategies (Hofstede, 2001; Rugman & Verbeke, 2004). Intriguingly, the Asia Pacific region's impact remains statistically insignificant in our analysis, indicating the need for a deeper exploration. Our findings highlight the pressing need for a nuanced examination of regional factors and their influence on Business Architecture practices and the specific drivers of maturity in different geographical contexts.

Organisational Size (Size_Rev and Size_Emp)

Counterintuitively our findings challenge the conventional belief that larger organisations, with their extensive resources, naturally possess greater potential for achieving higher Strategic Impact through Business Architecture. Surprisingly, both employee size categories ("250 - 9,999" and "10,000 or more") and revenue size categories ("100m - 1bn" and "1bn or more") fail to exhibit significant effects on the maturity of Business Architecture, with one notable exception. Organisations with a revenue size of "1bn or more" are found to be more likely to have higher Strategic Impact. This underscores the importance of effective resource allocation, strategic commitment, and visionary leadership in translating organisational potential into tangible strategic results. It emphasizes

the pivotal role of Business Architecture leaders in crafting a compelling vision, engaging senior leaders, and maintaining effective communication over a sustained time horizon (>5 years) to successfully mature the Business Architecture practice (Collis & Montgomery, 2008; Puthenpurackal Chakko, Huygh, & De Haes, 2021).

In summary, our exploration of Research Question 2 is unsurprisingly consistent with our findings for Research Question 1 (business architecture maturity). This insight expands our comprehension of the Strategic Impact of Business Architecture by shedding light on the significance of organisational commitment, sector-specific nuances, regional dynamics, and the intricate role of organisational size. These nuanced findings challenge conventional assumptions and advocate for tailored strategies, sector-specific maturity models, and a holistic perspective on Business Architecture's potential to drive alignment, innovation, and organisational success across diverse organisational and geographical contexts.

Conclusion

We have examined the intricate relationship between organisational and geographical factors and the efficacy of business architecture within enterprises by considering two hypotheses – first that these factors significantly influence the maturity and second, the strategic impact of business architecture. The results of our study affirmatively validate both of these hypotheses.

Our findings contribute a valuable insight for the academic and practitioner communities through the identification of the nuanced roles that organisational alignment, industry sector, geographic region reporting line and organisational size play in shaping business architecture's effectiveness. Traditionally, the discourse around business architecture has been predominantly focused on internal organisational structures and processes. This study, however, extends the boundaries of this discourse by introducing the often-overlooked geographic and organisational dimensions, thus offering a more comprehensive understanding of the factors influencing business architecture.

The use of a quantitative approach, employing an ordinal logistic regression analysis to interpret data collected via an online survey, provides a robust statistical foundation for these conclusions. However, this methodology is not without its limitations. The reliance on self-reported data raises concerns about potential biases, and the cross-sectional design of the study limits the ability to draw conclusions about the evolution of business architecture efficacy over time. Future research in this field could benefit from adopting longitudinal study designs to capture the dynamic nature of business architecture over time. Additionally, qualitative research methods could offer deeper insights into the complex interplay between organisational, geographic, and industry-specific factors, further enriching our understanding of this field.

From a practical standpoint, the implications of this study are significant for business leaders and business architecture practitioners. The findings suggest that strategies for implementing and developing business architecture should be tailored to the specific contexts of different organisations, regions and industries. It also highlights the significant commitment required to mature and derive tangible strategic impact from investments in business architecture capabilities. This has profound implications for the formulation of investment policies, development strategies, and organisational frameworks, emphasizing the need for a nuanced and context-sensitive approach. Our research makes a substantial contribution to the field of business architecture by highlighting the critical influence of often-overlooked external factors. It not only validates the initial hypothesis but also opens new avenues for academic enquiry and practical application, setting a foundation for future research and business policy formulation, business architecture practice and enterprise transformation. The study also provides a basis for a more holistic understanding of business architecture, urging a shift towards more context-specific strategies.

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