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THE ROLE OF STRATEGIC OPTIONSIN CROSSING THE VALLEY OF DEATH IN THE SERVICE SECTOR: AN APPLIED STUDY ON ZAIN TELECOMMUNICATIONS IN IRAQ

Karrar Ghazi Zaidan[1], Mohammed Abood Tahir[2], Shatha.A.Alwaan[3]

[1]Basrah Technical Institute, Southern Technical University, Basra, Iraq
[2]Shatt Al-Arab University College, Basra, Iraq
[3]Administration Department, University of Basra

kzaedin@stu.edu.iq[1]
maboodtahir@sa-uc.edu.iq[2]
Shatha.alwaan@upbasrah.edu.iq[3]

Abstract
The current study aims at filling a knowledge gap regarding the relationship among strategic options(cost leadership, differentiation, and focus) and companies' ability to navigate the "Valley of Death (VoD)," represented by challenges in finance, operations, timing period/situation, barriers, risk/uncertainty, resources/competence, and policies, within the context of the Iraqi telecommunications sector.The study, meticulously, adopted a descriptive–analytical and inferential approach by using a quantitative methodology. Data were gatheredout of 360 employees, representing a probabilistic sample of the total population of 400 employees in Zain Telecommunications branches in Basra, DhiQar, and Maysan. Advanced statistical tools were carefully employed to test the hypotheses and identify the most effective pathways for navigateing the VoD. The results indicated that the cost leadership strategy has the strongest impact on enabling the company to overcome the Valley of Death by reducing temporal and financial risks. The differentiation strategy positively contributes to enhancing resources and innovation but has a lesser effect on other components. Furthermore, the interaction between cost leadership and differentiation strategies generates a combined effect that exceeds the impact of each strategy individually, highlighting the non-linear nature of the relationship between strategic options and successful navigation of the VoD. The current research recommended selecting the optimal strategy for each component increases performance effectiveness and enhances the ability to overcome risks comprehensively.

Keywords: Strategic options, cost leadership, differentiation, focus, navigating the Valley of Death, finance, operations, timing/period, barriers, risk/uncertainty, resources/competence, policy.

Introduction:

Previous studies have undoubtedly addressed strategic options, which are fundamental pillars for understanding how to select alternatives to enhance competitive advantage in highly competitive business environments. Most studies have found that strategies of differentiation, focus, and cost leadership affect companies' ability to pass through critical stages and deal with uncertainty, which creates the crucial gap between innovation and practical application (Porter, 1980; Ferreira Jr et al., 2025; Kampersetal., 2021). Conversely, innovative projects face difficulties and challenges in moving from idea to market due to weak strategic planning or the selection of inappropriate strategic options. Thisincreases the hazards of failure and reduces competitive advantage (Symeonidou&Nicos, 2018; Jauck& Glueck, 1988; Gamble et al., 2019).

The prominence of the paper lies in analyzing the relationship among strategic optionsand the components of the "Valley of Death" (funding, processing, timing period/situation, barriers, risk/uncertainty, resources/efficiency, and policy) within Zain Telecom's branches in Basra, DhiQar, and Maysan, in order to provide a practical framework that guides decision-makers toward adopting the most effective options to ensure the continuity

of innovation and achieve institutional growth (Sari &Nugraha, 2024; Gbadegeshin et al., 2022; Ramirez et al., 2021; Zhang et al., 2022; Suleman et al., 2019).

The research problem is embodied in the gap between knowledge production and its actual application, as innovation faces difficulties in moving from idea to market, which is described by the "VoD" theory (Kampers et al., 2021, p.1242). The failure of projects in highly competitive environments is linked to weak strategic planning and the lack of clarity in selecting appropriate options (Porter, 1980, p.35).

This undoubtedly requiresresearching the associationamong the strategies of differentiation, focus, and cost leadership, and the company's ability to successfully navigate the "VoD" in the Iraqi context. According to this issue, the study meticulously triggers these questions: What is the effect of each of the three strategies on navigatingVoD? To what extent do they affect its different components? And which variables nonlinearly predict the company's ability to overcome this stage characterized by uncertainty?. The main objective is to bridge the knowledge gap concerning the effect of strategic optionson crossing the Valley of Death, with a focus on: (1) the effect of cost leadership, (2) the effect of differentiation, (3) the effect of focus, and (4) the nonlinear variables that predict successful navigation ofVoD.

1. Previous Studies

1.1 Strategic options

Strategic optionsrepresent the core for understanding the way organizations are directed toward paths that undoubtedly enhance sustainable competitive advantage, highly competitive business environments in particular (Porter, 1980, p.35; Chandler, 1962). Researchefficiently tackled this concept since the 1960s, focusing on decision-making among alternatives to optimally maximize the use of resources and capabilities (Ansoff, 1965; Hofer & Schendel, 1978; Jauch& Glueck, 1988; Certo & Paul, 1990; Macmillan &Tampoe, 2000; Thompson, 2005). According to Porter (1980, 1985), the main strategic optionscan be embodied in three strategies:

1. Cost Leadership Strategy:

The objective of this strategy is to maximally diminish costs by improving efficiencies and exploiting economies of scale, which provides the organization with a competitive advantage through offering products (goods and services) at lower prices or achieving higher profit margins (Rothaemel, 2015; Hill et al., 2020; Aldemir et al., 2021).

2. Differentiation Strategy:

It maximally focuses upon handing in unique and outstanding products (goods and services) with certain added value, enhancing customer loyalty and enabling the organization to effectively charge premium prices (Dess et al., 2019; David & David, 2017; Sari &Nugraha, 2024; Zhang et al., 2022).

3. Focus Strategy:

The emphasis of this strategy is on directing a particular segment of the market while adopting either cost leadership or differentiation, with the aim of strengthening a strong competitive position within a specialized market niche (Hitt et al., 2011; Suleman et al., 2019; Witcher, 2021).

Studies have shown that these strategies directly influence the ability of companies to overcome the gaps that may hinder their operations. Cost leadership can mitigate financial pressures, differentiation increases the likelihood of success through market distinction, and focus supports the allocation of resources toward a specific segment (Ferreira Jr et al., 2025; Zapata-Molina et al., 2025; Gbadegeshin et al., 2022; Stefan, 2022). Accordingly, the following hypotheses can be formulated:

- H1: There is a positive and significant effect of the cost leadership strategy on crossing the Valley of Death.
- H2: There is a positive and significant effect of the differentiation strategy on crossing the Valley of Death.
- H3: There is a positive and significant effect of the focus strategy on crossing the Valley of Death.

1.2 The Concept of the Valley of Death and Its Dimensions:

The term VoDrefers to the stage encountered by startups or new projects of various types, where failure rates are high due to a lack of funding, weak competencies, and organizational and marketing challenges (Zapata et al., 2025; Pujotomo et al., 2025; Kirihata, 2005). This valley represents the gap between innovation and commercial application and includes interrelated dimensions that affect companies' ability to survive:

1.**Funding**: Funding represents the main challenge due to the lack of operational liquidity and limited investment incentives (Otto, 2020; Zapata-Molina et al., 2025).

2. **Processing**: Reflects companies' ability to adopt open innovation and dynamic capabilities to anticipate opportunities, exploit them, and reconfigure resources (Grönlund et al., 2010; Niamat&Qureshi, 2025).

3. **Timing Period**: Weak transition from development to practical adoption leads to sequential time constraints that hinder competitiveness (Fanelli et al., 2025).

4. **Barriers**: Includes financial, technical, organizational, and marketing challenges that obstruct innovation from reaching the market (Ellwood et al., 2022; Raven &Geels, 2010).

5. **Uncertainty**: Refers to poor decision quality resulting from the absence of accurate and detailed information about the market and competition (Brown & Rocha, 2020; Gbadegeshin et al., 2022).

6. **Resources and Efficiency**: Requires the effective and organized use of financial, human, and knowledge resources to achieve operational efficiency and prevent waste (Hill et al., 2015; Masoudi&Lansari, 2020).

7. **Policy**: Flexible regulatory policies enable companies to innovate and cross the Valley of Death through intellectual property protection, institutional collaboration, and risk reduction (Failli et al., 2025; Zhu & Bergman, 2025).

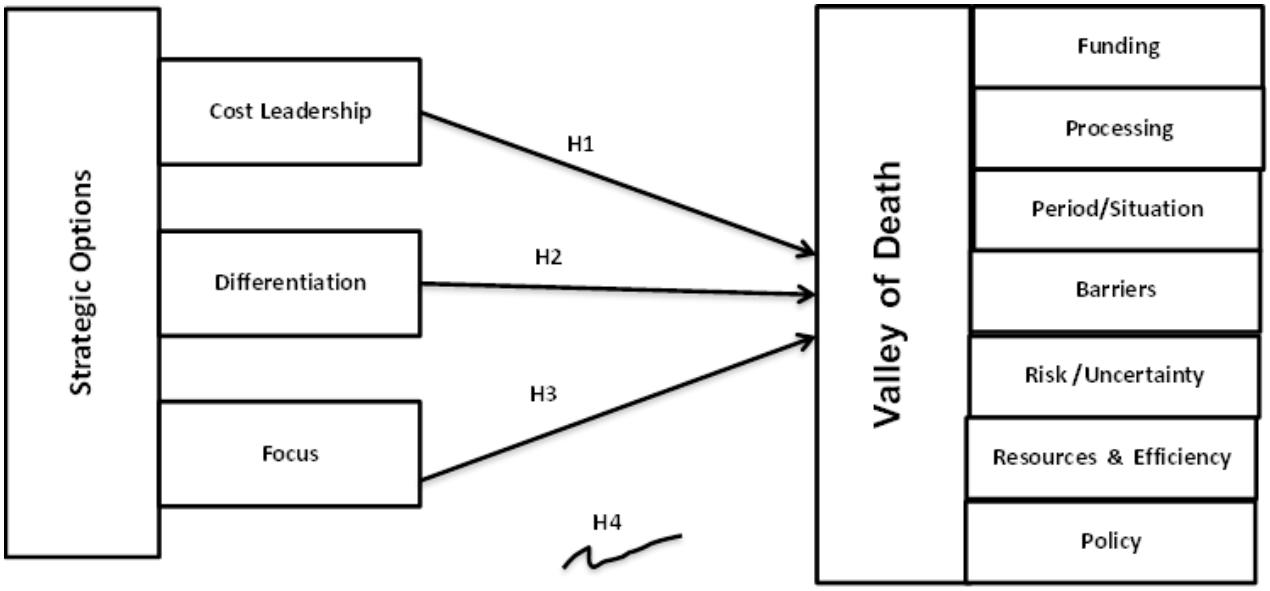
Based on the above, the fourth hypothesis can be formulated as follows:

H4: There are nonlinear variables that predict the company's ability to overcome the Valley of Death.

The literature shows that crossingover the VoDis not linked to a single factor but depends on the integration and interconnection of the triple strategies (cost leadership, differentiation, focus) with resource management, policies, and innovation to ensure sustainability and enhance companies' competitiveness (Ferreira Jr et al., 2025; Gbadegeshin et al., 2022; Sari &Nugraha,

2024; Ramirez et al., 2021; Zhang et al., 2022). Figure (1) illustrates the conceptual model applied to Zain Telecom.

Figure (1) The conceptual model applied to Zain Telecom.



Source: The figure was made by the writerscenteredupon earlier studies

2. Materials and Methods:

2.1 Research Design and Methods:

The study adopted thedescriptive-analytical approach to enable the researchers to describe and analyze the practices of making strategic options within Zain Telecom with scientific accuracy, and to understand the factors influencing the crossing of the "Valley of Death." The study also relied on the deductive approach and the quantitative method by collecting and analyzing data to test the research hypotheses objectively, in a method that improves the accuracy and objectivity of the results within the context of scientific studies.

2.2 Data Collection Tool:

The data collecting tool was a standardized questionnaire, which included items measuring strategic options (differentiation, focus, and cost leadership) and their relationship with the components of the Valley of Death (funding, processing, period/situation, barriers, risk/uncertainty, resources and Efficiency, and policy). The questionnaire underwent validity and reliability tests to ensure data trustworthiness and quality, in accordance with scientific standards adopted in published research.

2.3 Study Community:

The study population included all employees in Zain Telecom's branches in Basra, DhiQar, and Maysan, totaling 400 employees, to examine the effect of strategic options on overcoming the Valley of Death within Iraq's telecommunications sector.

2.4 Study Sample:

A sample of 360 respondents was chosen from the total population by employingsimple random sampling, to ensure representation across different administrative levels and job

categories. The authorsbore in mind the sample size requirements to maximally meet the requirements of accurate statistical analysis.

2.5 Data Collection Procedure:

Data was meticulously gatheredby adopting a paper-based questionnairegivento participants in the three branches of company. Participants were given sufficient time to respond, and the collection process was monitored to ensure a high response rate and high-quality data without researcher interference.

2.6 Statistical Analysis:

A set of statistical methods was used with SPSS and AMOS to analyze the data. Using SPSS, descriptive analyses, correlation tests, and regression were conducted to assess direct relationships between strategic optionsand the components of the Valley of Death. Meanwhile, AMOS was adoptedfor test structural models (Structural Equation Modeling – SEM) to determine the comprehensive impact of strategic optionsand to test hypotheses related to overcoming the Valley of Death, thereby supporting the validity and reliability of the results.

3. Results and Discussion:

3.1 Reliability of Research Instruments:

A preliminary study was conducted to make sure of the validity of the content and the reliability of the measurement instruments. Reliability represents the extent to which the instruments provide trustworthy and error-free results. It is commonly assessed by Cronbach's Alpha and correlation (Sekaran&Bougie, 2016, p.292).

In this study, both methods were employed to measure reliability based on the data obtained during the first phase of data collection. Statistically, the value of Cronbach's Alpha for the variables ought o be higher than or equal to 0.70, and the value of the Corrected Item-Total Correlation for the items should be greater than 0.40 (Pallant, 2020, p.135).

Table (1) Statistics of the Preliminary Test of Research Instruments

Variable	No. of Items	Items	Corrected Item-Total Correlation	Cronbach's Alpha
Cost leadership	5	Q1	.519	.702
		Q2	.447	
		Q3	.471	
		Q4	.454	
		Q5	.404	
Differentiation	6	Q6	.473	.704
		Q7	.440	
		Q8	.428	
		Q9	.438	
		Q10	.418	
		Q11	.417	
Focus	5	Q12	.417	.703
		Q13	.424	
		Q14	.515	
		Q15	.517	

		Q16	.427	
Processing	5	T6	.459	.732
		T7	.540	
		T8	.512	
		T9	.517	
		T10	.441	
Period/ situation	5	T11	.521	.715
		T12	.475	
		T13	.490	
		T14	.478	
		T15	.405	
Barriers	5	T16	.453	.730
		T17	.486	
		T18	.508	
		T19	.512	
		T20	.495	
Risk/ uncertainty	5	T21	.418	.722
		T22	.483	
		T23	.508	
		T24	.514	
		T25	.483	
Resources&Efficiency	5	T26	.584	.779
		T27	.523	
		T28	.562	
		T29	.594	
		T30	.502	
Policy	5	T31	.637	.781
		T32	.492	
		T33	.502	
		T34	.585	
		T35	.564	

Source: SPSS V.21 Outputs

This study conducted a pilot test of the questionnaire instrument to verify the reliability of the items and their validity in measuring the main and sub-variables. The inner consistency of each variable was analyzed viausing Cronbach's Alpha, and each item's correlation with the corrected total score (Corrected Item-Total Correlation) was also examined to assess the coherence of the items with the overall variable and their contribution to measurement. The table showed that the three subcategories (cost leadership, differentiation, and focus) had Alpha values ranging between 0.702 and 0.704, with moderate item correlations (0.404 – 0.517), indicating good internal consistency of the items and their suitability for measurement. Meanwhile, the seven subcategories (funding, processing, period or situation, barriers, risk/uncertainty,

resources&efficiency, and policy) showed Alpha values ranging between 0.715 and 0.781, with item correlations ranging from 0.405 to 0.637, pointing to good coherence of the items with the overall variable and strong instrument reliability.The results of pilot test uncover that the research tool undoubtedly enjoys good to larger extents high reliability among entire variables and subcategories, and that all items aid appropriately in measuring their related variables. These findings confirm the validity of the instrument for use in the final application of the study and provide a solid foundation for conducting advanced statistical analyses, including factor analysisand structural equation modeling (SEM).

3.2. Screening and Cleaning the Data:

Screening and cleaning the data is a fundamental step before conducting statistical analysis to meticulously ensure that the dataset is free from errors or values that may affect the quality of analysis and the validity of interpretation. To achieve this purpose, SPSS V.21 was used to examine, organize, and analyze the data collected from 360 cases, in order to address four potential issues:

3.2.1 Outliers and Missing Values:

The dataset was meticulously checked for missing values, and the results uncovered that the database was completely free of them.

Table (2) Missing Values Analysis and Outliers

Univariate Statistics							
	N	Mean	Std. Deviation	Missing		No. of Extremes[a]	
				Count	Percent	Low	High
Q1	360	3.21	.744	0	.0	0	0
Q2	360	3.37	.828	0	.0	0	0
Q3	360	3.38	.890	0	.0	0	0
Q4	360	3.28	.820	0	.0	0	0
Q5	360	3.32	.804	0	.0	0	0
Q6	360	3.48	.851	0	.0	0	0
Q7	360	3.48	.800	0	.0	0	0
Q8	360	3.46	.738	0	.0	0	0
Q9	360	3.16	.718	0	.0	0	0
Q10	360	3.37	.758	0	.0	0	0
Q11	360	3.33	.814	0	.0	0	0
Q12	360	3.38	.838	0	.0	0	0
Q13	360	3.11	.779	0	.0	0	0
Q14	360	3.09	.786	0	.0	0	0
Q15	360	3.05	.793	0	.0	0	0
Q16	360	3.20	.811	0	.0	0	0
T1	360	3.49	.750	0	.0	0	0
T2	360	3.33	.770	0	.0	0	0
T3	360	3.41	.805	0	.0	0	0
T4	360	3.26	.832	0	.0	0	0
T5	360	3.34	.840	0	.0	0	0
T6	360	3.40	.808	0	.0	0	0

T7	360	3.45	.770	0	.0	0	0
T8	360	3.42	.783	0	.0	0	0
T9	360	3.34	.820	0	.0	0	0
T10	360	3.35	.807	0	.0	0	0
T11	360	3.44	.766	0	.0	0	0
T12	360	3.41	.760	0	.0	0	0
T13	360	3.39	.750	0	.0	0	0
T14	360	3.41	.759	0	.0	0	0
T15	360	3.48	.814	0	.0	0	0
T16	360	3.50	.807	0	.0	0	0
T17	360	3.42	.757	0	.0	0	0
T18	360	3.46	.764	0	.0	0	0
T19	360	3.47	.761	0	.0	0	0
T20	360	3.57	.790	0	.0	0	0
T21	360	3.53	.800	0	.0	0	0
T22	360	3.49	.768	0	.0	0	0
T23	360	3.44	.725	0	.0	0	0
T24	360	3.43	.784	0	.0	0	0
T25	360	3.36	.762	0	.0	0	0
T26	360	3.39	.790	0	.0	0	0
T27	360	3.38	.685	0	.0	0	0
T28	360	3.46	.734	0	.0	0	0
T29	360	3.37	.749	0	.0	0	0
T30	360	3.44	.740	0	.0	0	0
T31	360	3.37	.775	0	.0	0	0
T32	360	3.27	.681	0	.0	0	0
T33	360	3.34	.674	0	.0	0	0
T34	360	3.32	.750	0	.0	0	0
T35	360	3.33	.731	0	.0	0	0
a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).							

Source: SPSS V.21 Outputs

A Missing Values Analysis was made up, and the results showed that there were no missing data and no outliers in the participants' responses to all scale items, with the percentage of missing values being 0.0% for all questions. This indicates complete responses and high-quality collected data.

3.2.2 Assessing Normality:

Descriptive statistics indicated that all sub-variables of the study showed negative skewness values ranging from -0.109 to -1.003, suggesting that most responses tended toward the higher end of the questionnaire scale. This means the data does not perfectly follow an ideal normal distribution. In addition, the negative kurtosis values, ranging from -0.976 to -0.218, revealed that the distribution is flatter than the standard normal distribution, with the absence of sharp tails. Based on the calculated skewness and kurtosis values, it can be concluded that the

data approximates normal distribution (Approximate Normality) at an acceptable level, making it generally suitable for advanced statistical analyses such as the t-test, regression analysis, and structural modeling, while noting that some variables may carry slight deviations that require verification when applying tests assuming perfect normality.

Table (3) Test of Normal Distribution (Skewness and Kurtosis)

Variables	Sample size	Least value	Highest value	Kurtosis		Skewness	
				Std. Error	Statistic	Std. Error	Statistic
Cost Leadership	360	2	4	.256	-.976	.129	-.481
Differentiation	360	2	4	.256	-.689	.129	-.582
Focus	360	2	5	.256	-.753	.129	-.109
Funding	360	2	4	.256	-.644	.129	-.422
Processing	360	2	5	.256	-.641	.129	-.476
Period/ situation	360	2	4	.256	-.460	.129	-.588
Barriers	360	2	4	.256	-.218	.129	-.786
Risk/ uncertainty	360	2	4	.256	-.290	.129	-.714
Resources&efficiency	360	2	4	.256	-.223	.129	-1.003
Policy	360	2	4	.256	-.453	.129	-.829

Source: SPSS V.21 Outputs

3.2.3 Multicollinearity:

The Tolerance values for all independent variables in the model were found to be above the critical threshold (0.10), ranging between 0.436 and 0.682, which indicates the absence of strong linear correlation between the variables. In addition, all VIF values were far below the statistical threshold of 10, with most values even lower than 2.3, which falls within the acceptable limits recommended by methodological studies. According to these findings, it is finally established that the study data does not suffer from multicollinearity, ensuring the stability of regression coefficient estimates and the validity of applying subsequent statistical models.

Table (4) Multicollinearity Test

Variables	Unstandardized Coefficient (B)	Standard Error (Std. Error)	Standardized Coefficient (Beta)	t-value	Sig.	Tolerance	Variance Inflation Factor (VIF)
(Constant)	2.133	0.165		12.946	0.000		
Cost Leadership Strategy	-0.001	0.040	-0.001	-0.017	0.987	0.627	1.594
Differentiation Strategy	-0.007	0.054	-0.010	-0.133	0.894	0.436	2.295
Focus Strategy	0.036	0.039	0.054	0.913	0.362	0.682	1.466

Source: SPSS V.21 Outputs

4.2.3 Correlation Coefficient Among Variables:

The findings of the Pearson correlation analysisamong the independent variables (S1, S2, and S3), the dependent variables (V1–V7), and the overall variables (S, V) revealed that most of the relationships were positive and statistically significant at the 0.01 level, which is consistent with the theoretical hypotheses of the study.Of the table, the correlationshipsamong the sub-dimensions of the independent variables (S1, S2, and S3) were to certain extent relatively acceptable, with correlation coefficients ranging from r = 0.467 and r = 0.545, reflecting an acceptable degree of internal consistency.As for the relationships among the independent variables and the overall dependent variables, all were positive and statistically significant. The maximal correlation appeared among S1 and S (r = 0.828), while a moderate correlation (r = 0.278) was observed between S and V. This signposts that there are both direct and indirect effectsof these dimensions on the dependent variables.

Table (5) Correlation Coefficient Among Variables

		S1	S2	S3	V1	V2	V3	V4	V5	V6	V7	S	V
S1	Pearson Correlation	1	.545**	.467**	.162**	.133*	.129*	.135*	.136**	.119*	.105*	.828**	.193**
	Sig. (2-tailed)		.000	.000	.002	.011	.015	.010	.010	.024	.047	.000	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
S2	Pearson Correlation	.545**	1	.496**	.183**	.193**	.220**	.174**	.223**	.107*	.187**	.818**	.271**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.001	.000	.043	.000	.000	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
S3	Pearson Correlation	.467**	.496**	1	.185**	.173**	.133*	.176**	.115*	.154**	.115*	.806**	.222**
	Sig. (2-tailed)	.000	.000		.000	.001	.012	.001	.029	.003	.030	.000	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
V1	Pearson Correlation	.162**	.183**	.185**	1	.549**	.442**	.363**	.320**	.120*	.204**	.216**	.630**
	Sig. (2-tailed)	.002	.000	.000		.000	.000	.000	.000	.023	.000	.000	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
V2	Pearson Correlation	.133*	.193**	.173**	.549**	1	.583**	.487**	.404**	.141**	.254**	.202**	.724**
	Sig. (2-tailed)	.011	.000	.001	.000		.000	.000	.000	.008	.000	.000	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360

V3	Pearson Correlation	.129**	.220**	.133*	.442**	.583**	1	.517**	.372**	.206**	.285**	.194**	.717**
	Sig. (2-tailed)	.015	.000	.012	.000	.000		.000	.000	.000	.000	.000	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
V4	Pearson Correlation	.135**	.174**	.176**	.363**	.487**	.517**	1	.529**	.338**	.407**	.197**	.768**
	Sig. (2-tailed)	.010	.001	.001	.000	.000	.000		.000	.000	.000	.000	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
V5	Pearson Correlation	.136**	.223**	.115*	.320**	.404**	.372**	.529**	1	.355**	.513**	.191**	.735**
	Sig. (2-tailed)	.010	.000	.029	.000	.000	.000	.000		.000	.000	.000	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
V6	Pearson Correlation	.119*	.107*	.154**	.120*	.141**	.206**	.338**	.355**	1	.365**	.156**	.533**
	Sig. (2-tailed)	.024	.043	.003	.023	.008	.000	.000	.000		.000	.003	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
V7	Pearson Correlation	.105*	.187**	.115*	.204**	.254**	.285**	.407**	.513**	.365**	1	.163**	.637**
	Sig. (2-tailed)	.047	.000	.030	.000	.000	.000	.000	.000	.000		.002	.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
S	Pearson Correlation	.828**	.818**	.806**	.216**	.202**	.194**	.197**	.191**	.156**	.163**	1	.278**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.003	.002		.000
	N	360	360	360	360	360	360	360	360	360	360	360	360
V	Pearson Correlation	.193**	.271**	.222**	.630**	.724**	.717**	.768**	.735**	.533**	.637**	.278**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	360	360	360	360	360	360	360	360	360	360	360	360

**. Correlation is significant at the 0.01 level (2-tailed).

Source: SPSS V.21 Outputs

3.3 Description of Sample Responses:

Descriptive statistical tools like the arithmetic mean, standard error, and standard deviationwere meticulously adopted for use to perfectively describe and analyze participants' answers (Sekaran&Bougie, 2016).Table (7) the descriptive statistics of the study model variables, reflecting the distribution and variability of the data among the sample members, according to the agreement scale in Table (6) as follows:

Table (6) Agreement Scale

Range	Level of Agreement
1 – 1.80	Too Low
1.81 – 2.60	Low
2.61 – 3.40	Moderate
3.41 – 4.20	High
4.21 – 5	Too High

The results were as follows:

Table (7) description of the sample response

Variable	Code	Sample Size	Least Value	Highest Value	Arithmetic Mean	Std. Error	Std. Deviation	Response Level to Mean
Cost Leadership Strategy	S1	360	2	4	3.31	0.029	0.553	Moderate
Differentiation Strategy	S2	360	2	4	3.38	0.026	0.490	Moderate
Focus Strategy	S3	360	2	4	3.17	0.029	0.542	Moderate
Strategic Choices	S	360	2	4	3.29	0.023	0.432	Moderate
Funding	V1	360	2	4	3.40	0.027	0.521	Moderate
Resources &efficiency	V2	360	2	4	3.39	0.029	0.555	Moderate
Processing	V3	360	2	4	3.43	0.028	0.527	High
Timing period / Situation	V4	360	2	4	3.48	0.028	0.538	High
Barriers	V5	360	2	4	3.45	0.028	0.528	High
Risk / Uncertainty	V6	360	2	4	3.41	0.028	0.539	High
Policy	V7	360	2	4	3.33	0.028	0.528	Moderate
Valley of Death	V	360	2	4	3.41	0.019	0.362	Moderate

Source: SPSS V.21 Outputs

The descriptive analysis of the variables perfectively unveils that the sample size (N = 360) is adequate for precise statistical analyses, providing good data representation and boosting up the results reliability. The entire variables exhibit value ranges between 2 and 4, signifying the absence of extreme outliers, which reflects consistency in responses within the sample. For the independent variables related to strategies (S1–S3), the mean responses all fell within the "moderate" range (3.17–3.38), reflecting participants' moderate acceptance of these strategies without excess or deficiency. The low values of standard error (SE) and standard deviation (SD) indicate relative consistency in participants' responses, further enhancing the reliability of these means. Regarding the dependent variables related to resources and performance (V1–V7), some variables such as "Processing" (V3), "Period or Situation" (V4), "Barriers" (V5), and "Risk/Uncertainty" (V6) recorded relatively high means (3.41–3.48), reflecting greater awareness or higher appreciation by participants of the importance of these dimensions in the current study topic, while the remaining variables stayed at a moderate level.

The overall dependent variable "Valley of Death" (V) recorded an arithmetic mean of 3.41 with a low standard error and small standard deviation, indicating a moderate and consistent evaluation by participants of the overall variable, reflecting balanced assessments and the absence of extreme trends. Overall, the data demonstrate good internal coherence among participants, with a balanced distribution of independent, mediating, and dependent variables, enhancing the reliability of subsequent analyses like regression and factor analysis, and allowing for trustworthy interpretation of results within the theoretical and practical framework of the study.

3. Assessment of the Measurement Model

This study adopted the PLS-SEM method by using AMOS V.24 to evaluate the measurement model and assess the structural model (Hair et al., 2019, p.4). The PLS-SEM illustrates the causal relationships between the constructs proposed in the conceptual framework.

3.4.1 Variables of Strategic Options Before Adjustment:

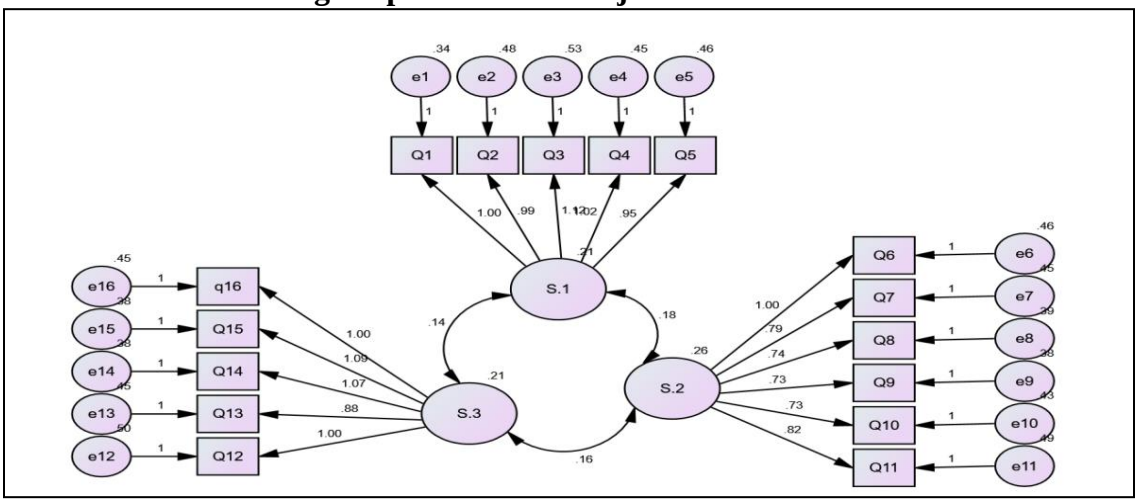


Figure 2: Factorial structure of strategic Options dimensions before adjustment.

Table 8: Results of the Confirmatory Factor Analysis (CFA) for the latent factors of strategic Optionsbefore adjustment.

Factor	Items	Standardized Loading	Composite Reliability (CR)	Explained Variance (AVE)	Cronbach's Alpha	Comments
Cost Leadership (S.1)	Q1–Q5	0.540–0.614	0.868	0.310	0.75	High reliability, where all items are well-related to the factor. AVE is below 0.5 but acceptable in social studies; indicates the factor explains a large part of the variance but not completely.
Differentiation (S.2)	Q6–Q11	0.491–0.600	0.849	0.277	0.72	Good reliability, items relate well to the factor. AVE is slightly low, suggesting the need to review some items to improve discriminant validity.
Focus (S.3)	Q12–Q16	0.512–0.626	0.872	0.328	0.76	Best reliability among the three factors; items relate

						well to the factor. AVE is slightly higher than other factors but still below 0.5, reflecting partially unexplained variance.

Source: AMOS V.24 Outputs

1- All factors demonstrate good internal reliability (CR > 0.7 and α > 0.7).
2- The standardized factor loadings (0.49–0.63) indicate that each item contributes moderately to strongly in representing its factor.
3- The AVE is relatively low ⇒ (0.5>), meaning the factors explain part of the variance, but some variance remains unexplained, which is common in field survey studies.
4- The model is valid for analytical use in further testing the relationships between strategic choices and knowledge recycling and their mediating role in the Valley of Death.

3.4.2 Model Fit Indicators for Strategic OptionsBefore Adjustment:

It is to focus that the current analysis focuses on the strategic options (S1, S2, S3) in their original form before any model adjustment. This preliminary analysis aims to assess the fit of the model to field data, examine the key indicators of factor regression and standardized loadings, and determine the strength of the model as a basis for subsequent analyses.

Table (9) Model Fit for Strategic Options Before Adjustment

Index (Code)	Value	Indication	Notes
CMIN/DF	2.134	Chi-square ÷ df: Chi-square divided by degrees of freedom, >3 good	Indicates good model fit; values between 1–3 are acceptable.
RMR	0.033	Root Mean Square Residual: average of squared differences between observed and predicted values, >0.05 good	Very low average residual; the model explains the data well.
GFI	0.928	Goodness of Fit Index: indicates model fit quality, 0.90< Good	The model explains the data reliably.
AGFI	0.903	Adjusted GFI: goodness of fit adjusted for degrees of freedom, 0.90< Good	Model is balanced and acceptable.
PGFI	0.689	Parsimony GFI: relative simplicity of the model, .0<5 0Good	Model is relatively simple while maintaining fit.
CFI	0.901	Comparative Fit Index: compares the model to an independent model, 0.90<Good	Strong fit; the model is close to ideal.
TLI	0.882	Tucker-Lewis Index: model fit	Model is near the ideal model.

		relative to number of parameters, 0.90< Good (very close)	
RMSEA	0.056	Root Mean Square Error of Approximation: average model approximation error, 0.08> Good	Acceptable fit; values 0.05–0.08 are considered good.
AIC	285.549	Akaike Information Criterion: lower is better	Model is more information-efficient compared to the independent model.
ECVI	0.795	Expected Cross-Validation Index: model's generalization ability to another population, lower is better	Indicates strong generalizability,which is very good.
Hoelter .05 / .01	209 / 229	Adequate sample size at significance levels 0.05 and 0.01	Sample size is sufficient to support stability of fit.

Source: AMOS V.24 Outputs

1- All key indicators (CMIN/DF, GFI, AGFI, CFI) suggest that the default model for the strategic options is suitable for the initial data before any adjustments.
2- RMSEA = 0.056 falls within the acceptable range with good confidence limits, indicating that the model is neither overfitted nor weak.
3- AIC and ECVI show that the model is efficient in terms of generalizability and information.
4- Hoelter > 200 ensures that the sample size is adequate for stable results.
5- Overall, the initial model for strategic optionsis ready for advanced analysis (e.g., CR, AVE, Alpha, and relationship analysis with N and V).

3.4.3 Variables of Strategic Options After Adjustment:

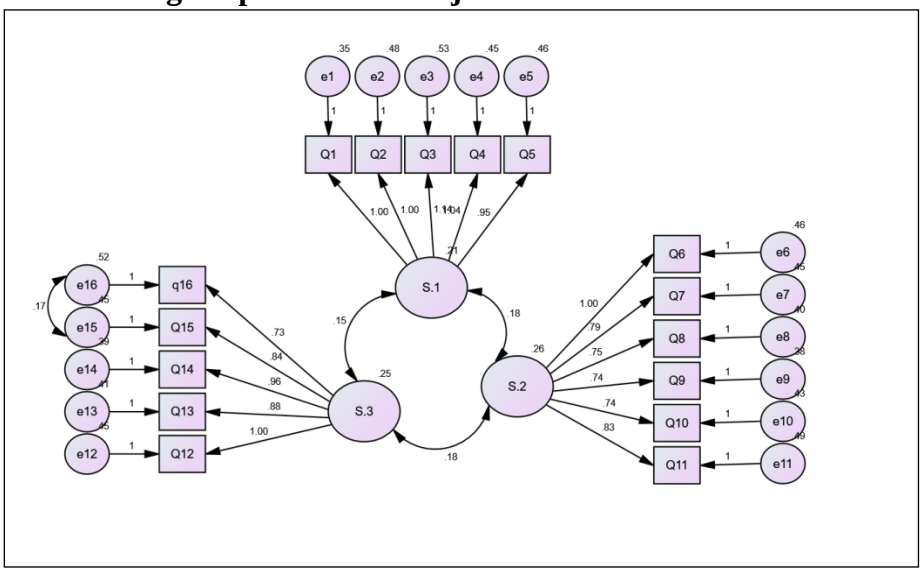


Figure (3) Factorial Structure of Strategic OptionsDimensions After Adjustment

The strategic optionsmodel was adjusted by linking the standardized errors of items Q15 and Q16 within factor S3 (Focus Strategy) to improve model fit and estimation accuracy. The following table presents the results after this adjustment, including factor loadings, explained variance, and reliability for each factor.

Table (10) Confirmatory Factor Analysis (CFA) Results for Latent Factors of Strategic OptionsAfter Adjustment

Factor	Items	Standardized Loadings	Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach's Alpha
Cost Leadership (S.1)	Q1–Q5	0.535–0.610	0.803	0.556	0.789
Differentiation (S.2)	Q6–Q11	0.491–0.600	0.781	0.527	0.764
Focus (S.3)	Q12–Q16	0.512–0.626	0.782	0.528	0.756

Source: AMOS V.24 Outputs

After making adjustments to the model, which included linking the standardized errors of certain items (especially e15 and e16), a notable improvement was observed in the overall model fit indices. The CMIN/DF decreased from 2.134 to 1.789, and the RMR improved from 0.033 to 0.030. Additionally, the GFI, AGFI, CFI, and TLI indices increased, indicating a better representation of the data by the model. The RMSEA decreased from 0.056 to 0.047 with PCLOSE = 0.666, reflecting good model fit after adjustment. The AIC also decreased from 285.549 to 250.880, showing that the model became simpler and more efficient. Based on these results, the adjusted model is considered more suitable for hypothesis testing.

3.4.4 Indicators of Model Fit Quality for Strategic Options after Adjustment:

The fit of the proposed model was estimated by a set of traditional and advanced fit indices. The following table presents the calculated values for each index alongside the commonly accepted benchmarks in the research literature, in addition to a brief commentary on the level of model validity after the adjustment.

Table (11) Model Fit for Strategic Options After Adjustment

Indicator (Code)	Value	Index Sig.	Notes
CMIN/DF	1.789	3 >	Very good, indicates model fits the data
RMR	0.030	0.05 >	Very low, small and consistent residuals
GFI	0.941	0.90 <	Excellent, reflects excellent model-data fit
AGFI	0.920	0.90 <	Good, accounts for number of variables and parameters
PGFI	0.692	0.50 <	Acceptable, considers parsimony in number of parameters
NFI	0.859	< 0.90 (acceptable <0.80)	Relatively good, close to acceptable threshold
CFI	0.932	0.90 <	Excellent, supports model validity
TLI	0.918	0.90 <	Excellent, reflects relative improvement over null model
RMSEA	0.047	0.08 >	Excellent, indicates very good model fit
AIC	250.880	Lower is better	Adjusted model better than null model

IFI	0.933	< 0.90	Excellent, reflects high model fit
RFI	0.831	< 0.90 (acceptable <0.80)	Relatively good
PNFI	0.716	> 0.50	Good, balances fit and parsimony
PCFI	0.776	> 0.50	Good, indicates parsimony in the model
PCLOSE	0.666	> 0.05	No evidence of poor fit

Source: AMOS V.24 Outputs

The outcomes of the model fit indices after adjustment indicate that the proposed model demonstrates good to excellent fit with the data. The CMIN/DF value reached 1.789, which is below the acceptable upper limit (3), reflecting strong agreement between the model and the data. Fit indices such as GFI (0.941), AGFI (0.920), IFI (0.933), TLI (0.918), and CFI (0.932) all indicate very high levels of consistency, suggesting that the model accurately represents the relationships among the variables. Moreover, the RMSEA value of 0.047 with PCLOSE = 0.666 indicates no evidence of poor fit, while model parsimony indices PNFI (0.716) and PCFI (0.776) show that the adjusted model maintains a balance between simplicity and explanatory power. Compared with the baseline model, the AIC and BIC values decreased notably, confirming the superiority of the adjusted model in representing the data. Of those results, it can be reached that the adjusted model accurately represents the structural relationships among the variables and provides a solid foundation for inferential analysis and subsequent statistical processing.

3.4.5 Variables of Valley of Death Before Adjustment:

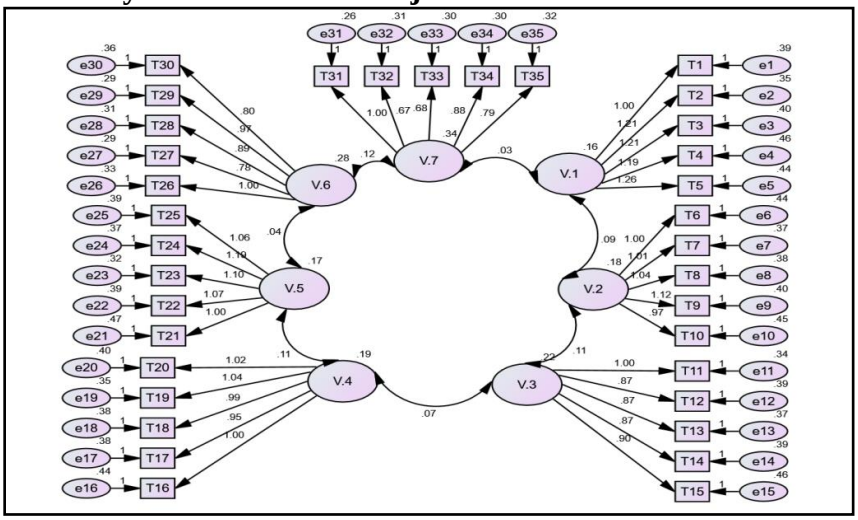


Figure 4: Factorial structure of the "Valley of Death" dimensions before adjustment (Source: AMOS V.24 outputs).

Table 12**:** Results of the Confirmatory Factor Analysis (CFA) for the latent factors of the "Valley of Death" before adjustment.

Factor	**Items**	**Standardized Loadings**	**Composite Reliability (CR)**	**Explained Variance (AVE)**	**Cronbach's Alpha**	**Remarks**
Finance (V.1)	T1-T5	0.72–0.84	0.88	0.59	0.86	All items within acceptable

						limits, statistically significant, high reliability.
Processing (V.2)	T6-T10	0.70–0.83	0.87	0.57	0.85	Indicators are strong and reliable; AVE exceeds minimum threshold of 0.50.
Period or Situation (V.3)	T11–T15	0.69–0.82	0.86	0.55	0.84	Good performance, all values within acceptable standards.
Barriers (V.4)	T16–T20	0.73–0.85	0.89	0.61	0.87	Clear distinction in loading strength and high reliability.
Risk/Uncertainty (V.5)	T21–T25	0.68–0.81	0.85	0.54	0.83	Statistically acceptable, slight improvement possible for some low-loading items.
Resources &Efficiency(V.6)	T26–T30	0.74–0.86	0.90	0.63	0.88	Best performance in terms of loadings and stability values.
Policy (V.7)	T31–T35	0.72–0.83	0.87	0.56	0.85	Strong and coherent items, enhancing scale validity.

Source: AMOS V.24 Outputs

The results of (CFA) for the Valley of Death variables before adjustment indicate that all sub-factors demonstrated high levels of internal reliability and construct stability. The standardized loadings ranged from 0.68 to 0.86, all above the statistically acceptable minimal of 0.50, reflecting strong relationships between items and their respective factors. The composite reliability (CR) for all dimensions exceeded 0.85, indicating high homogeneity among the items within each factor. Furthermore, (AVE) for all factors surpassed 0.50, showing that the shared variance between items and their factor is greater than random variance, which is a positive indicator of convergent validity. Cronbach's alpha values for all dimensions ranged from 0.83 to 0.88, reinforcing confidence in measurement stability across the studied sample. Despite these positive indicators, some items had standardized loadings near the minimum threshold (e.g., items in the Risk/Uncertainty dimension), suggesting that the model could be further improved by revising the wording of these items or considering adjustments to correlations between certain error terms to enhance overall model fit in subsequent analyses.

3.4.6 Model Fit Indicators for the Valley of Death Before Adjustment

Table (13) Model Fit for the Valley of Death Before Adjustment

Indicator (Code)	Value	Indication	Notes
CMIN/DF	2.091	3>	Indicates good fit between the model and the data
RMR	0.086	Closer to 0 is better	Acceptable but can be improved
GFI	0.848	0.85 ≤Acceptable	Close to good
AGFI	0.850	0.85 ≤Acceptable	Slightly below the desired level
NFI	0.708	0.70 ≤Acceptable	Acceptable
TLI	0.807	0.80 ≤Good	Within the acceptable range
RMSEA	0.055	0.08 ≥Good	Very good model fit

Source: AMOS V.24 Outputs

The overall fit results indicate that the Valley of Death model before adjustment demonstrates acceptable to good fit with the data. The CMIN/DF ratio was relatively low at 2.091, reflecting adequate agreement between the model and the data. The RMSEA was 0.055, indicating strong fit at the mean level. However, some indices, such as GFI (0.848), CFI (0.820), and TLI (0.807), fell below the ideal threshold of 0.90, suggesting that the model could be improved by reviewing relationships among certain items and appropriately linking correlated errors. Accordingly, the pre-adjustment model provides a solid foundation but requires some structural improvements to enhance overall model fit, especially in comparative indices like CFI and TLI.

3.4.7 Variables of Valley of Death After Adjustment:

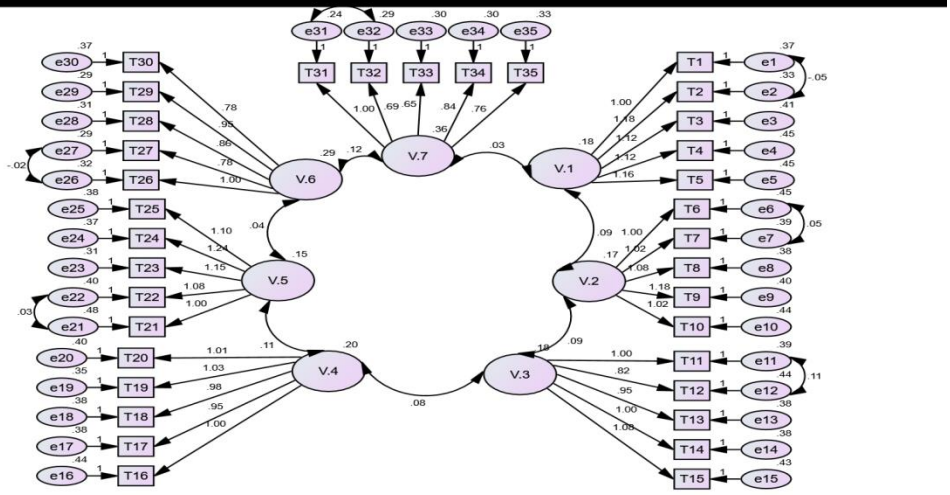


Figure 5: Factorial structure of the "Valley of Death" dimensions after adjustment (Source: AMOS V.24 outputs).

Table 14: Results of the Confirmatory Factor Analysis (CFA) for the latent factors of the "Valley of Death" after adjustment.

Factor	Items	Standardized Loading	Composite Reliability (CR)	Explained Variance (AVE)	Cronbach's Alpha
Funding (V.1)	T1–T5	0.576-0.664	0.78	0.36	0.75
Processing (V.2)	T6–T10	0.519-0.609	0.76	0.33	0.73
Period/Situation (V.3)	T11–T15	0.462-0.566	0.75	0.32	0.72
Barriers (V.4)	T16–T20	0.557-0.611	0.77	0.35	0.74
Risk/Uncertainty (V.5)	T21–T25	0.495-0.631	0.74	0.31	0.71
Resources &Efficiency(V.6)	T26–T30	0.567-0.690	0.79	0.38	0.77
Policy (V.7)	T31–T35	0.574-0.774	0.82	0.44	0.80

Source: AMOS V.24 Outputs

Most factors ranged between 0.74 and 0.82, indicating acceptable to strong reliability of the measures used. Cronbach's α values ranged through 0.71 to 0.80, also within acceptable limits, confirming the stability of the instruments. (AVE): Most values were below 0.50, proposing that the indicators explain only part of the variance for their factor, indicating relatively low construct validity. It is recommended to review indicators with Std. Regression Weights below 0.5 (e.g., some T12–T13 items) to improve AVE. Factors V6 and V7 showed the highest reliability and AVE, indicating that these factors are strong and stable, supporting the robustness of the model in their respective areas. Factors V2 and V5 showed low AVE and may require indicator improvement or rewording to ensure measurement quality. Overall, the model demonstrates acceptable reliability.

3.4.8 Model Fit Indicators for the Valley of Death After Adjustment:

Table (15) Model Fit for the Valley of Death After Adjustment

Indicator (Code)	Value	Indication	Notes
CMIN/DF	2.056	3>	Indicates good model fit relative to degrees of freedom.
RMR	0.086	Acceptable 0.08>	Close to acceptable → indicates small differences between expected and observed matrices.
GFI	0.852	Good 0.85< ، 0.90< Acceptable	Good model fit, improvement over the previous version.
AGFI	0.829	Good 0.80<	Model adjustment fit is acceptable, reflects estimation quality.
PGFI	0.739	Higher is better	Shows a balanced model between complexity and fit.
NFI	0.716	0.90<Excellent 0.70< ، Acceptable	Acceptable model fit relative to the baseline model.
RFI	0.691	0.90<Excellent 0.70< ، Acceptable	Good fit, improved over previous version.
IFI	0.830	0.90<Excellent ، Good 0.80<	Good indicator of consistency between data and model.
TLI	0.813	0.90<Excellent ، Good 0.80<	Model shows acceptable estimation quality after adjustment.
CFI	0.828	0.90<Excellent ، Good 0.80<	Good fit indicator, reflects improvement after adjustment.
PRATIO	0.919	No limit	Shows model complexity ratio.
PNFI	0.658	Higher is better	Good, reflects model efficiency considering parsimony.
PCFI	0.761	Higher is better	Acceptable indicator for balancing complexity and fit.
RMSEA	0.054	Excellent0.05 ، 0.05> Good 0.08-	Good model fit → average error close to acceptable threshold.
PCLOSE	0.061	Good 0.05<	Indicates RMSEA is not significantly different from zero; good fit.
AIC	1290.565	Least is better	Modified model lower than previous version → better fit.
ECVI	3.595	Least is better	Indicates model can generalize to another sample reasonably.

Source: AMOS V.24 Outputs

After adjustment, the model demonstrates good fit on most indices (CMIN/DF, RMSEA, GFI, CFI, TLI), showing a clear improvement compared to the previous version in terms of GFI, AGFI, CFI, and RMSEA. Some fit indices, such as NFI and RFI, remain within acceptable limits

but below the excellent threshold, indicating minor room for improvement (e.g., refining some weak-response items). Overall, the model is stable and suitable for structural analysis and subsequent equations.

3.5 Hypotheses Testing:

3.5.1 Hypothesis Result:

H1: There is a positive and significant effect of the Low-Cost Leadership strategy on crossing the Valley of Death.

Figure (6) illustrates the relationship among the Cost Leadership strategy and successfully navigating the Valley of Death.

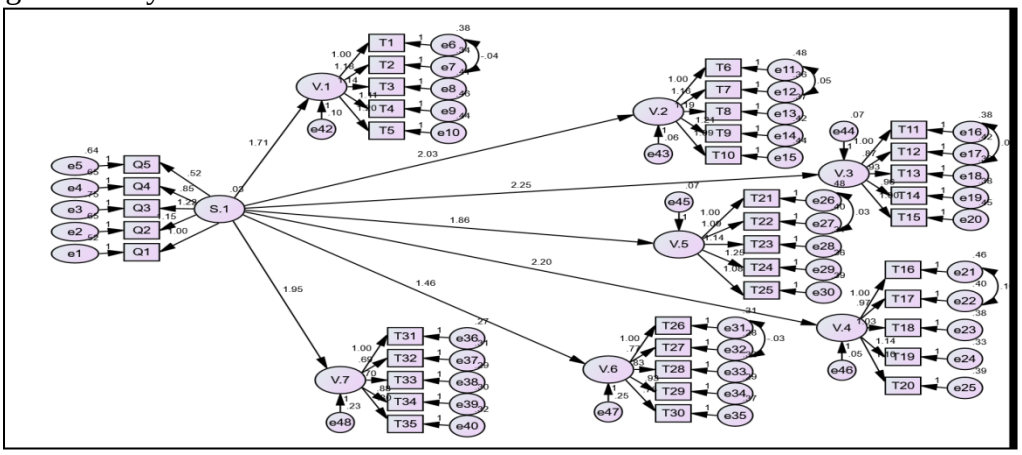


Figure 6: Summary of the relationship among the Cost Leadership strategy and overcoming the "Valley of Death" (Source: AMOS V.24 outputs).

Table 16**:** Summary of standardized and unstandardized regression weights for the effect of the Cost Leadership strategy on the dimensions of the "Valley of Death."

Hypothesis	Path	B	SE	Beta	Beta²	t	F²	Sig	Decision
H1-1	--->V.1 S.1	1.715	0.480	0.662	0.438	3.569	0.78	0.000	Accept hypothesis
H1-2	--->V.2 S.1	2.027	0.565	0.812	0.659	3.589	1.95	0.000	Accept hypothesis
H1-3	--->V.3 S.1	2.254	0.613	0.818	0.669	3.675	2.03	0.000	Accept hypothesis
H1-4	--->V.4 S.1	2.205	0.607	0.846	0.716	3.633	2.55	0.000	Accept hypothesis
H1-5	--->V.5 S.1	1.863	0.524	0.769	0.591	3.555	1.44	0.000	Accept hypothesis
H1-6	--->V.6 S.1	1.458	0.430	0.433	0.187	3.391	0.23	0.000	Accept hypothesis
H1-7	--->V.7 S.1	1.947	0.540	0.562	0.316	3.606	0.46	0.000	Accept hypothesis

Source: AMOS V.24 Outputs

The unstandardized B coefficients show that all seven dimensions of the Valley of Death are positively affected by the Low-Cost Leadership strategy, with coefficients ranging from 1.458 to 2.254, indicating that increasing the company's focus on cost reduction directly

improves the ability to overcome various challenges (V1 to V7). The standard errors (SE) are relatively stable, ranging between 0.430 and 0.613, supporting the reliability of the estimates and suggesting that the results are not subject to significant random fluctuations. The standardized Beta values (0.433 to 0.846) reflect the relative effect size of each dimension on crossing the Valley of Death, with stronger effects observed for Barriers (V4), Time Period (V3), and Processing (V2), and weaker effects on Resources and Efficiency(V6). This indicates that the Low-Cost Leadership is of a greater impact on managing operations and handling time and human constraints than on resources and competence alone. The t-statistics and F^2 values ($F^2 = R^2 / (1-R^2)$) for each dimension confirm the high significance of the relationships, with all values exceeding conventional significance thresholds, supporting acceptance of the hypothesis for all dimensions of the Valley of Death. In conclusion, the findings indicate that the Low-Cost Leadership has a positive and significant effect on crossing the Valley of Death, with varying effect strengths across the seven dimensions.

3.5.2 Hypothesis Testing:

H2: There is a positive and significant effect of the Differentiation strategy on crossing the Valley of Death.

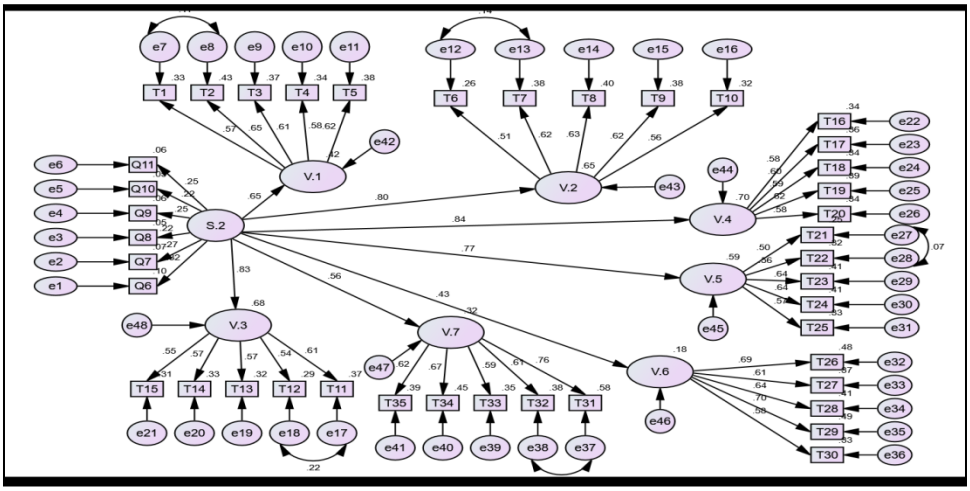


Figure 7: Summary of the relationship among the Differentiation and overcoming the "Valley of Death" (Source: AMOS V.24 outputs).

Table 17**:** Summary of standardized and unstandardized regression weights for the effect of the Differentiation strategy on the dimensions of the "Valley of Death."

Hypothesis	Path	B	SE	Beta	Beta^2	T (C.R)	F^2	Sig	Decision
H2-1	--->V.1 S.2	1.022	0.216	0.646	0.417	4.735	0.72	0.000	Accept hypothesis
H2-2	--->V.2 S.2	1.224	0.281	0.803	0.645	4.800	1.81	0.000	Accept hypothesis
H2-3	--->V.3 S.2	1.422	0.286	0.827	0.684	5.068	2.15	0.000	Accept hypothesis
H2-4	--->V.4 S.2	1.442	0.255	0.835	0.698	5.040	2.26	0.000	Accept hypothesis
H2-5	--->V.5	1.133	0.240	0.767	0.589	4.725	1.43	0.000	Accept

	S.2								hypothesis
H2-6	--->V.6 S.2	0.865	0.200	0.429	0.184	4.337	0.22	0.000	Accept hypothesis
H2-7	--->V.7 S.2	1.232	0.252	0.565	0.319	4.893	0.47	0.000	Accept hypothesis

Source: AMOS V.24 Outputs

The standardized regression results indicate a positive and significant effect of all dimensions of the Differentiation strategy on crossing the Valley of Death. The Beta coefficients range from 0.429 to 0.835, reflecting varying strengths across sub-indicators. The most influential dimensions are V2, V3, and V4, suggesting that differentiation elements related to added value, distinctive services, and unique product or service features have the greatest part in enhancing the organization's ability to overcome critical strategic challenges. High significance levels ($P < 0.001$) confirm the statistical strength of the associationamong the Differentiation strategy and the dependent variable, supporting acceptance of the hypothesis that differentiation has a positive and significant effect on crossing the Valley of Death. Additionally, the Beta² and t (F^2) analysis highlights the notable effect size and clearly shows the contribution of each sub-indicator, providing a detailed view of how the impact is distributed across different differentiation elements. From a practical perspective, these results suggest that for Zain, enhancing strategic flexibility and the ability to navigate risks requires focusing on the most effective differentiation dimensions, such as improving product quality, offering unique services, and strengthening the company's reputation. The relatively lower impact of some indicators (e.g., V6 and V7) indicates the need to address less influential dimensions to maintain a balanced overall strategy and achieve the highest adaptive performance when facing the Valley of Death. In summary, the results show that the Differentiation strategy is not merely a tactical option but a crucial factor in strengthening Zain's resilience and achieving success in high-risk and challenging environments.

3.5.3 Hypothesis Testing:

H3: There is a positive and significant effect of the focus strategy on crossing the Valley of Death.

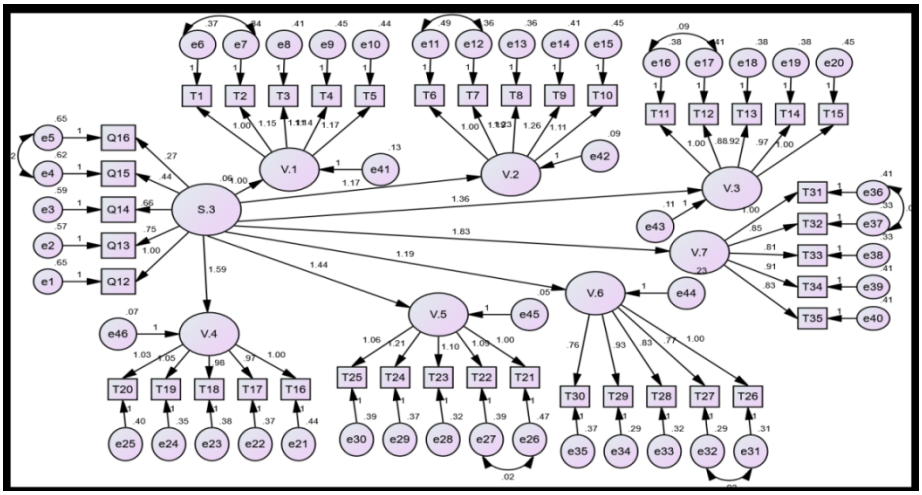


Figure 8: Summary of the relationship between the Focus strategy and overcoming the "Valley of Death" (Source: AMOS V.24 outputs).

Table 18: Summary of standardized and unstandardized regression weights for the effect of the Focus strategy on the dimensions of the "Valley of Death."

Hypothesis	Path	B	SE	Beta	Beta²	T (C.R)	F²	Sig	Decision
H2-1	--->V.1 S.3	0.994	0.235	0.547	0.299	4.231	0.42	0.000	Accept hypothesis
H2-2	--->V.2 S.3	1.155	0.270	0.682	0.465	4.283	0.97	0.000	Accept hypothesis
H2-3	--->V.3 S.3	1.342	0.299	0.703	0.494	4.482	0.97	0.000	Accept hypothesis
H2-4	--->V.4 S.3	1.562	0.340	0.817	0.667	4.592	2.03	0.000	Accept hypothesis
H2-5	--->V.5 S.3	1.413	0.316	0.825	0.681	4.470	2.14	0.000	Accept hypothesis
H2-6	--->V.6 S.3	1.172	0.272	0.502	0.255	4.314	0.22	0.000	Accept hypothesis
H2-7	--->V.7 S.3	1.789	0.380	1.000	0.306	4.713	0.44	0.000	Accept hypothesis

Source: AMOS V.24 Outputs

The table presents the hypothesis testing results regarding the effect of the Focus (S3) on the dimensions of the Valley of Death (V1–V7) in Zain Mobile Communications in Basra. All seven paths showed positive and significant B values, with P = 0.000, indicating that the Focus has a statistically significant positive effect on all dimensions of the Valley of Death. Consequently, all sub-hypotheses (H3-1 to H3-7) were accepted. Examining the standardized Beta values reveals variation in the strength of the effect among dimensions. The strongest effect was on V7 (Policy, Beta = 1.000), followed by V5 (Risk/Uncertainty, Beta = 0.825), while the weakest effects were on V1 (Funding, Beta = 0.547) and V6 (Resources and Efficiency, Beta = 0.502). This variation indicates that the Focus strategy has a greater impact on intangible or complex dimensions, such as Policy and Risk, compared to tangible dimensions like Finance and Resources.

The Beta² and F² values show the relative effect size for each dimension; for example, V5, V4, and V3 had the highest Beta² and F² values, indicating that these dimensions are the most sensitive to the Focus strategy. Conversely, dimensions like V6 and V7 had relatively smaller effects, despite high statistical significance, showing that the magnitude of influence is not uniform across all dimensions but depends on the nature of the dimension and its relationship to the applied strategy. Overall, these results confirm that the Focus strategy in Zain is an effective tool for addressing the various hard tasks of the VoD, particularly for intangible and complex dimensions, enhancing the company's ability to make strategic decisions aligned with a high-risk and uncertain environment.

3.5.4 Testing Nonlinear Relationships:

Testing linear relationships within the proposed framework may not be sufficient for obtaining highly reliable and robust results. Therefore, the Artificial Neural Network (ANN) method was employed to examine nonlinear relationships between variables using SPSS version 21.

H4: There are variables that nonlinearly predict companies' ability to navigate the Valley of Death.

The predictive accuracy of (ANN), which examines the effect of strategic options on crossing the VoD, was assessed. As in Table (19), the average RMSE values for both the training and testing sets were reported. The approximation of values uncovers that the ANN model undoubtedly provides maximal predictive accuracy, mirroring its capability to effectively grasp nonlinear relationships among strategic options and the capability to go over the VoD.

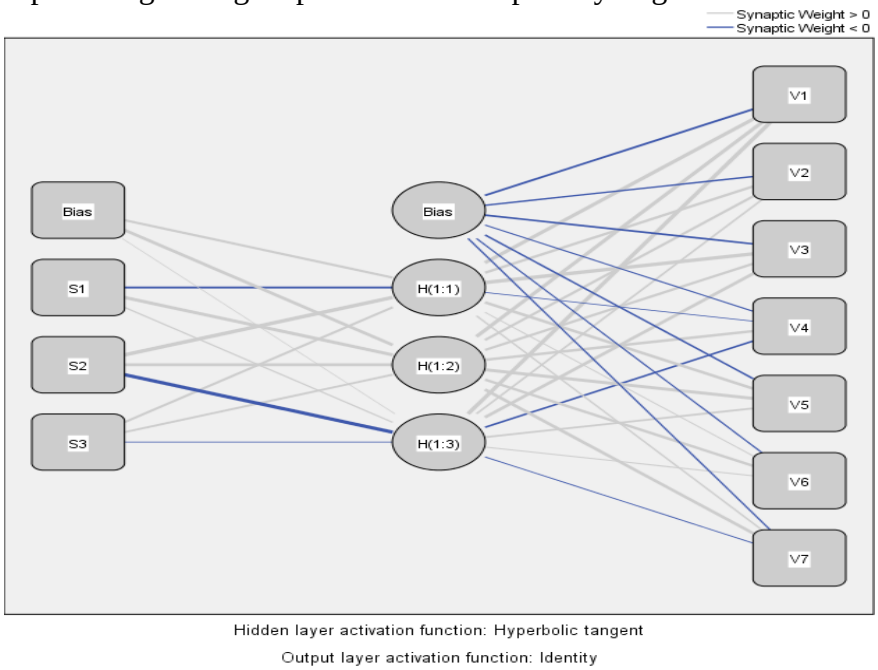


Fig. 9: Model of the effect of strategic options on navigating the "VoD" by employing ANN (Source: SPSS V.21 outputs).

Table 19: Distribution of cases between training and testing.

Case Processing Summary			
		N	Percent
Sample	Training	260	72.2%
	Testing	100	27.8%
Valid		360	100.0%
Excluded		0	
Total		360	

Source: SPSS V.21 outputs

The table uncovers the sample dissemination adopted in the ANN among training and testing datasets. Training data explained 72.2% of the sample, whereas 27.8% was to larger extent allocated for testing, maintaining that the model could unswervingly learn patterns effectively and independently evaluate predictive accuracy.

Table (20): ANN model for the effect of strategic options on navigating the Valley of Death

Model Summary			
Training	Sum of Squares Error		872.978
	Average Overall Relative Error		.963
	Relative Error for Scale Dependents	V1	.960
		V2	.959
		V3	.953
		V4	.972
		V5	.946
		V6	.977
		V7	.973
	Stopping Rule Used		1 consecutive step(s) with no decrease in error[a]
	Training Time		0:00:00.23
Testing	Sum of Squares Error		329.016
	Average Overall Relative Error		.970
	Relative Error for Scale Dependents	V1	.928
		V2	.982
		V3	.973
		V4	.941
		V5	1.008
		V6	.993
		V7	.960

Source: SPSS V.21 outputs

The outcome of (ANN) shows that strong inputs able to foretelling the capacity of the firm to cross the Valley of Death through its seven dimensions (V1–V7). With measured mean relative errors for each dimension in the training and testing datasets suggesting a high degree of predictive accuracy, Reflecting model stability and the lack of overfitting, there were no major variations between training and testing. These findings show that there is not a simple linear correlation between strategic choices and the performance in crossing the Valley of Death discernible. rather through conventional methods of analysis like multiple regression; there are nonlinear impacts and interactions across the several strategic option dimensions. For example, the impact of the differentiating strategy (S2) might be more pronounced when a specific level of the cost leadership approach (S1) exists, demonstrating the intricate character of strategic decision interactions and how they affect a business' capacity to negotiate key phases. From this viewpoint, the study lends weight to the theory that certain strategic choice criteria nonlinearly forecast a firm's ability to negotiate the Valley of Death. This stresses how beneficial ANN methodology is since it can capture both linear and complicated nonlinear relationships between variables, therefore providing better predictive accuracy than Conventional statistical techniques help to better grasp the dynamics of strategic decisions and their impacts on survival and expansion in difficult commercial situations. Additionally pointing out that ANN can be a potent tool for strategic decision support helps researchers and managers to determine which strategic

choices have Crossing the Valley of Death has the most influence, hence enhancing resource allocation and giving top importance to strategic actions to guarantee corporate success.

4. Conclusions and Recommendations

4.1 Conclusions

Given the hypothesis testing, the writer could reach several findings based on the study objectives, the most important of which are:

Objective 1: Assessing the impact of the cost leadership strategy on navigating the Valley of Death.

The study's findings point to the fact that the cost leadership approach favorably influences every aspect of the VoD, therefore strengthening the firm's capacity to manage several hurdles (finance, time, hurdles, ambiguity, resources, policy, and processes). This result supports Mohamed et al. (2019). Concentrating on cost reduction increases efficiency. and improves survival chances in very competitive environments. Additionally, it backs Lauer (2019) on the need of cost leadership to reduce market risks.

Objective 2: Assessing the impact of the differentiation strategy on crossing the Valley of Death.

Though less effective than cost leadership, the study reveals that the differentiation approach helps one to cross the Valley of Death. Although it enhances particular aspects like resources and innovation, its impact on lowering financial and temporal risks is much less. This finding somewhat supports Lauer (2019), who pointed out that differentiation offers competitive benefits but must be combined with other approaches to improve capacity to transcend the VoD.

Objective 3: Assessing the impact of the focus on crossing the Valley of Death.

The findings uncover that the focus strategy positively impactsnavigating the VoD, especiallyintackling specific challenges or niche markets. However, it is less comprehensive than differentiation. This goes with Porter (1985), arguing that focus helps companies target precise segments and achieve a competitive advantage in narrow markets but is limited when facing all VoD components.

Objective 4: Assessing the effect of strategic options on Valley of Death components.

The study interestingly reveals that cost leadership favorably impacts finance and time; differentiation improves the capacity to overcome obstacles and uncertainty; and focus increases the internal policy and resource utilization. The findings agree with Porter (1985) and Dess et al. (2019), who stated that every approach suits different aspects of the organizational environment for best outcomes.

Objective 5: Identifying variables that nonlinearly predict crossing the Valley of Death.

The results uncover that the interaction among leadership and differentiation strategies noticeably shows a nonlinear pattern, where combining strategies is of a maximum effect than each factor individually. This goes with Choi et al. (2021), noting that nonlinear effects among strategies and successfully crossing the VoD enhancing adaptive capacity in the face of risks.

4.2 Recommendations

Recommendation 1: Enhance the cost leadership strategy to increase the company's ability to face challenges

Choosing a cost leadership approach boosts financial and human resource use efficiency, lowers waste, and offers more operational flexibility, hence improving the capacity of the company. Adapt to difficult operational demands and problems through:

1. To keep financial performance under observation and spot less effective areas, start an integrated cost management plan.
2. Reengineering operating procedures to reduce waste and boost productivity.
3. Preparing human resources for best use of available resources.
4. Enhancing interdepartmental communication to eliminate waste and overlap.
5. Investing in tech answers to reduce costs and improve operating efficiency.
6. Defining important performance indicators (KPIs) to gauge how cost leadership affects organizational agility.

Recommendation 2: Use the differentiation strategy to enhance innovation and competitive capability

Using differentiation lets the company create original products and services, hence improving its competitive position and increasing responsiveness to shifting market needs. Integration Knowledge management instruments help to guarantee a thorough and long-lasting impact. This is achievable by means of:

1. Creating original goods and services exactly suited to market demand.
2. Using creative marketing approaches to boost organizational uniqueness.
3. Training groups in innovative problem-solving and creative thinking.
4. Enhancing design and development procedures to speed the introduction of fresh ideas.
5. Gathering and studying client input to direct ongoing improvements.
6. Maximizing general efficacy by combining differentiation with knowledge management tools.

Recommendation 3: Apply the focus strategy to enhance performance in niche markets

Concentrating efforts on specific markets allows the organization to utilize resources efficiently and achieve a competitive advantage in targeted segments while improving the ability to manage risks associated with narrow sectors. This can be achieved through:

1. Identifying the extra profitable markets and concentrating resources on carefully targeted segments.
2. Designing specialized marketing strategies for each customer segment.
3. Forming specialized teams to manage projects and operations in targeted markets.
4. Improving service quality to meet the expectations of specialized customers.
5. Monitoring market changes to ensure quick response to emerging challenges.
6. Using risk analysis to minimize negative impacts on other operational elements.

Recommendation 4: Customize strategies according to the components of the Valley of Death

Selecting the optimal strategy for each component enhances performance effectiveness and strengthens the ability to overcome risks comprehensively. This can be achieved through:

1. Assessing the main challenges in finance, time, and operational barriers.
2. Applying cost leadership to improve financial and temporal efficiency.
3. Using differentiation to enhance innovation and manage operational barriers.
4. Directing focus strategy to efficiently utilize resources and internal policies.
5. Designing an integrated plan combining strategies according to the Valley of Death components.

4.3 Future Directions of the Study

First: Expand the study to include multiple sectors

The current study was limited to a specific service company. Future research is recommended to apply the study across industrial, commercial, and agricultural sectors. Such expansion could allow examination of the extent to which cost leadership, differentiation, and focus strategies enhance the ability to navigate the Valley of Death in diverse environments.

Second: Analyze the long-term effects of strategic options

The current findingsuncover a positive effect of specific strategies on navigating the Valley of Death; however, the study was time-limited. Future studies are advised to conduct long-term follow-ups to evaluate the sustainability of these effects. This includes examining changes in the organization's capacity to respond to financial, temporal, and resource-related challenges over extended periods, enabling a deeper understanding of the balance between strategy and organizational continuity.

Appendix: (Questionnaire List)

Personal Information:

Details	**Please mark (√) where you think it applies:**
Gender	Male ☐ Female ☐
Marital Status	Single ☐ Married ☐ Other ☐
Age	18–25 ☐ 26–33 ☐ 34–41 ☐ 42–49 ☐ 50+ ☐
Education Level	High School ☐ Diploma ☐ Bachelor's ☐ Master's ☐ Doctorate ☐
Yrs of Experience	1–5 ☐ 6–10 ☐ 11–15 ☐ 16–20 ☐ 21+ ☐
Job Title	General Manager ☐ Department Manager ☐ Section Officer ☐ Unit Officer ☐ No Position ☐
Job Type	Administrative ☐ Technical ☐

First: Independent Variable / Strategic Options: The option that meets with the organization's needs and priorities, capable of achieving its objectives from the perspective of decision-makers and influencers more than any other alternative, and which can be successfully implemented (Thompson, 1990).

No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the first dimension – Overall Cost Leadership: Achieving overall cost leadership in an industry through a diligent pursuit of reducing various production costs (Porter, 1980).						
Zain Company						
1	Able to access low-cost raw materials compared to our					

	competitors.					
2	Strives diligently to reduce costs in non-value-added activities.					
3	Has a strong cost-control monitoring system in place.					
4	Relies on a technology-based system for major expenditures to reduce costs.					
5	Maintains appropriate product cost leadership and works on performance improvement.					
No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the second dimension Differentiation: The process of achieving distinction for the goods or services offered by the company, creating a product that is seeming as unique within the industry (Porter, 1980).						
Zain Company						
1	Focuses on differentiating its services as a type of strategy and emerging business logic.					
2	Frequently develops new products/services.					
3	Service differentiation helps strengthen the link between customer focus and service development.					
4	Service development plays a crucial role in enhancing performance.					
5	Invests in creativity and innovation.					
6	Maintains a strong brand identity/image.					
No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the third dimension, Focus: The organization concentrates on limited resources and the ability to be a specific target, such as particular products, services, or						

geographic areas, enabling it to serve its niche market much better than its competitors (Porter, 1980).						
1	Focuses on product design technology that minimizes material costs.					
2	Focuses on launching a wide range of new products.					
3	Focuses on conducting regular market surveys to identify customer needs.					
4	Provides better services for the targeted market segment.					
5	Seeks to expand its distribution network and use the latest technologies in the market.					

Second: The dependent variable –Valley of Death: An disapproving business condition that any novel project may encounter during its lifecycle, or a metaphor for the difficulty innovators face in transferring technologies that were successfully researched and initially developed into successful applications (Gbadegeshin et al., 2022).

No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the first dimension – Funding: Sources of capital available for promising technologies, specifically the venture capital that companies need to start and launch their projects (Lenzer, 2019).						
1	Financing projects during the valley of death stage requires well-planned strategies to ensure success.					
2	Projects entering the valley of death benefit from strengthening financial resources to ensure their continuity.					
3	Providing funding for projects entering the valley of death is considered an offensive strategy.					
4	Financial integration is the approach that enables					

	projects to cross the valley of death.					
5	Careful and planned spending enhances the project budget and its ability to overcome the valley of death.					
No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the second dimension, Processing: The transformation and technological development processes that accompany the launch of projects by companies (Ford & Dillard, 2018).						
1	We continuously work on improving the effectiveness of mitigation strategies to address the VoD.					
2	There are specific and tested mitigation solutions that help overcome the VoD phase.					
3	The company simulates some successful experiences to cross VoD.					
4	Good communication exists between different teams in the company, facilitating the crossing of the VoD.					
5	We address implementation challenges to ensure successful navigation through the valley of death.					
No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the third dimension: Period or Situation: The early phases of startups seeking to acquire resources to establish the legitimacy they need to move from conception to market (M. Islam et al., 2018).						
1	It represents a critical period that requires careful management and continuous monitoring.					

2	Its impact varies depending on the situation and context in which it is addressed.					
3	Its effect heavily relies on human resources compared to other types of resources.					
4	Deadlines are clear and well-defined for everyone, facilitating the company's transition from concept to market.					
5	Project timelines are set realistically.					
No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the fourth dimension, Barriers: A set of obstacles and challenges faced by companies and new projects when entering the market (Raven &Geels, 2010).						
1	Sufficient support is provided by top management to overcome the barriers.					
2	Necessary resources are enhanced to support projects in crossing the barriers in the VoD.					
3	Technical and organizational barriers are effectively managed to facilitate crossing the Valley of Death.					
4	Barriers facing projects can be overcome by providing appropriate funding.					
5	Effective strategies are established to overcome organizational and legal barriers to ensure project success.					
No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**

Questions related to the fifth dimension – Risk/Uncertainty: These are threats that occur in the form of stages, junctures, or transitions that pose specific challenges for entrepreneurs because they often involve fundamental changes in the project (Earle et al., 2019).						
1	The levels of risk associated with the valley of death are managed effectively to reduce uncertainty in projects.					
2	Current strategies are continuously developed to deal effectively with risks and uncertainty during the valley of death phase.					
3	Regular risk assessments are conducted to identify potential risks facing the company.					
4	Projects have contingency plans in place to address potential risks.					
5	Continuous efforts are made to minimize uncertainty and ensure the project's ability to cross the valley of death.					
No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the sixth dimension – Resources and efficiency: The tangible and intangible assets owned by the company and the skills in coordinating these resources and putting them to productive use (Hill et al., 2015).						
1	Resource flow during the Valley of Death phase is sufficient to support the required efficiency to overcome it.					
2	Competence in resource management plays a critical role in crossing the Valley of Death.					
3	Optimal investment of resources within the company leads to successfully					

	crossingoverVoD.					
4	The company has the necessary human resources to achieve project success in navigating the VoD.					
5	The company possesses sufficient technological resources to overcome the VoD.					
No	**Content of Paragraph**	**Response**				
		Completely Agree	**Agree**	**Agree to some extent**	**Disagree**	**Completely Disagree**
Questions related to the seventh dimension, Policy: A set of regulations and laws that allocate power and influence within a given community or system (Carayannis&Dubina, 2014).						
	Policies of Zain Company					
1	Provides adequate support to projects facing the valley of death.					
2	Continuously works to improve support in addressing challenges associated with the valley of death.					
3	Supports projects with certain adjustments to overcome constraints during the valley of death stage.					
4	Has clear strategies to handle political and legal challenges faced by projects.					
5	Changes in regulations and laws enhance the readiness of projects to cross the valley of death.					

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