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Net Effects Versus Configurations: A Multi-Method Configurational Analysis of Service Marketing Mix Drivers of Customer Satisfaction at OYDC Zambia Sports Development Centre

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Abstract: This study examines whether customer satisfaction in a sport-service context is better explained by symmetric net-effects modeling or asymmetric configurational modeling. Specifically, it investigates how the 7Ps service marketing mix jointly and independently relate to satisfaction at OYDC Zambia Sports Development Centre. Using survey data from 201 customers, the study employs hierarchical OLS regression with HC3 robust standard errors alongside fuzzy-set Qualitative Comparative Analysis (fsQCA). The symmetric model estimates additive net effects, while fsQCA identifies sufficient configurations and tests equifinality and causal asymmetry. Robustness checks include alternative calibration thresholds and stricter consistency cut-offs. OLS indicates that the 7Ps collectively increase explanatory power but no single element exerts a significant independent effect in the full model. In contrast, fsQCA reveals multiple sufficient configurations producing high satisfaction, demonstrating equifinality, substitution effects and causal asymmetry. No single P is necessary for satisfaction. The study reconceptualises the 7Ps as interdependent configurational systems rather than independent levers and contributes to the symmetric–asymmetric modeling debate in service marketing, particularly within an emerging economy context.

Keywords: *Service Marketing Mix, 7Ps, fsQCA, Configurational Theory, Customer Satisfaction, Emerging Economies.*

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I. INTRODUCTION

The service marketing mix framework, originally advanced by Booms and Bitner (1981), remains foundational in explaining customer satisfaction across diverse service contexts. By extending the traditional 4Ps to include people, process, and physical evidence, the 7Ps framework acknowledges the experiential, interactive, and intangible nature of services. Despite its theoretical robustness, empirical applications of the 7Ps have largely relied on additive regression-based models that assume linearity, independence, and causal symmetry among variables (Woodside, 2013).

Such assumptions may inadequately capture the systemic and holistic manner in which customers evaluate service encounters. Service experiences - particularly in high-contact environments such as sport and youth development programmes - are inherently configurational, where value is co-created through the interaction of multiple elements rather than isolated attributes. As argued by Grönroos (2007), customers interpret service offerings as integrated bundles of functional and experiential components. This raises a central theoretical question: Does customer satisfaction arise from independent marginal effects of marketing mix elements, or from coherent configurations of interdependent conditions?

This question becomes even more salient within emerging economy sport-service contexts, where institutional constraints, infrastructural limitations, and resource scarcity shape both service delivery and customer experiences. In Zambia, sport is widely recognised as a critical tool for youth empowerment, social inclusion, and national development (Ministry of Youth, Sport and Child Development

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(MYSCD), 2019). National sport policy frameworks emphasise the role of structured sport programmes in fostering talent development, health outcomes, and community engagement. Institutions such as the National Olympic Committee of Zambia (NOCZ) have played a central role in promoting participation and developing high-performance pathways within the country (National Olympic Committee of Zambia, 2020).

A key milestone in Zambia's sport development landscape was the establishment of the Olympic Youth Development Centre (OYDC) in Lusaka through a partnership between the Government of Zambia and the International Olympic Committee (IOC, 2016). The OYDC Zambia Sports Development Centre was conceptualised as a flagship "sport for development" facility aimed at expanding access to sport while integrating education, life skills, and community engagement initiatives. The Centre provides multi-sport infrastructure, training programmes, and youth-focused development activities, positioning it as a hybrid service institution that combines sport delivery with broader social development objectives (International Olympic Committee, 2016; OYDC Zambia, 2021).

Empirical and institutional reports highlight the Centre's contribution to talent identification and athlete development, as well as its role in hosting regional competitions and community outreach programmes (International Olympic Committee, 2016; OYDC Zambia, 2021). More broadly, sport development initiatives in Zambia and across Sub-Saharan Africa are characterised by challenges such as limited funding, infrastructural gaps, and variability in service quality, which influence participant experiences and satisfaction (Lindsey & Grattan, 2012; Schulenkorf, 2017). These contextual realities suggest that customer satisfaction in such environments is unlikely to be driven by isolated service attributes. Instead, satisfaction is more plausibly shaped by interdependent combinations of service elements, including staff competence (people), programme design (process), infrastructure quality (physical evidence), and accessibility (place).

Consequently, traditional symmetric analytical approaches may obscure important causal patterns underpinning customer satisfaction. To address this limitation, the present study adopts a multi-method analytical approach, combining hierarchical Ordinary Least Squares (OLS) regression and fuzzy-set Qualitative Comparative Analysis (fsQCA) (Ragin, 2008; Fiss, 2011).

By embedding the analysis within a Zambian sport development context, this study makes three key contributions. First, it advances service marketing theory by offering a configurational reinterpretation of the 7Ps, emphasizing causal complexity, equifinality, and conjunctural causation in customer satisfaction formation. Second, it contributes methodologically to the symmetric–asymmetric modeling debate by demonstrating the complementary value of regression and fsQCA approaches. Third, it extends emerging economy service research by providing empirically grounded insights into how service delivery configurations operate under resource constraints in sport-based development institutions such as OYDC Zambia.

➢ *Research Hypotheses*

- To examine the additive net effects of the 7Ps on customer satisfaction
- To identify configurational pathways leading to high and low satisfaction
- To assess the robustness of findings across calibration and threshold specifications.

II. THEORETICAL BACKGROUND

➢ *The Service Marketing Mix and Satisfaction*

The 7Ps framework integrates tangible and intangible service components (Booms and Bitner, 1981). Expectancy–disconfirmation theory (Oliver, 1980) posits that satisfaction results when perceived performance meets or exceeds expectations. Empirical studies frequently link product/service design, price fairness, accessibility, promotional communication, service environment, employee conduct and operational efficiency to satisfaction outcomes (Zeithaml et al., 1996). However, most analyses assume additive causation, where each P independently contributes to satisfaction. This perspective implies linearity and marginal independence.

➢ *Limitations of Additive Modeling*

Configurational theory challenges additive assumptions by introducing: conjunctural causation: conditions operate jointly (Ragin, 2008); equifinality: multiple pathways lead to the same outcome (Fiss, 2011); causal asymmetry: causes of presence differ from causes of absence (Woodside, 2013). In service systems characterised by interdependent processes, satisfaction may emerge only when particular bundles align coherently.

➢ *Emerging Economy Context*

Emerging economies exhibit infrastructural volatility, resource asymmetry and institutional fragility (Khanna and Palepu, 2010). Under such conditions, customers may evaluate services through adaptive, compensatory logic rather than isolated performance benchmarks. This context likely amplifies causal complexity, making configurational approaches theoretically appropriate.

III. METHODOLOGY

➢ *Research Design*

This study employed a cross-sectional survey design to examine the relationship between the 7Ps service marketing mix and customer satisfaction at OYDC Zambia Sports Development Centre. Data were collected from customers immediately after service use, and 201 complete and usable questionnaires were retained for analysis. A cross-sectional design is appropriate for assessing associations among service perceptions and customer outcomes in applied marketing research (Hair et al., 2019).

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➢ *Measures*

Each of the 7Ps was operationalized using multi-item Likert-scale measures. Overall satisfaction was measured using two binary items (recoded to represent satisfaction presence). Construct reliability ranged from moderate to strong (Cronbach's α ≈ .60–.82).

Table 1 Descriptive Statistics and Reliability

Construct	Items	N	Cronbach alpha
Product	4	194	0.806
Price	3	196	0.623
Place	3	195	0.686
Promotion	4	201	0.807
Physical evidence	3	201	0.599
People	5	201	0.824
Process	5	193	0.747

➢ *Analytical Strategy*

- *Symmetric Modeling*

Hierarchical OLS regression with HC3 robust standard errors was estimated: Model 1: Controls and Model 2: Controls + 7Ps

- *Asymmetric Modeling*

Fuzzy sets were calibrated using direct methods (Ragin, 2008). Truth tables applied frequency ≥ 3 and consistency ≥ .80 thresholds. Complex solutions were computed. Separate analyses were conducted for high and low satisfaction.

✓ Robustness Checks Included: alternative percentile anchors (10–50–90), theoretical Likert anchors, and stricter consistency threshold (.85).

IV. RESULTS

➢ *Hierarchical OLS Results*

The hierarchical OLS models were estimated with HC3 heteroskedasticity-consistent standard errors. Model 1 (controls only) explained 22.9% of the variance in customer satisfaction (R^2 = .229, p = .014). After adding the service marketing mix indices (7Ps) in Model 2, explained variance increased to 31.4% (R^2 = .314, p = .001), indicating that the 7Ps collectively add incremental explanatory power (ΔR^2 = .085). However, none of the individual 7P indices achieved statistical significance at the .05 level in the full model, suggesting that the relationship between the 7Ps and satisfaction may be better characterized by conjunctural and compensatory patterns rather than isolated net effects - consistent with the motivation for configurational analysis. Multicollinearity diagnostics indicated no problematic collinearity among the 7Ps predictors (VIFs = 1.35–2.26).

Table 2 Model fit (HC3 SEs Used for Inference)

Model	N	R^2	Adj. R^2	F-statistic	p
Model 1 (Controls)	201	0.229	0.104	1.782	0.014
Model 2 (Controls + 7Ps)	201	0.314	0.168	2.098	0.001

Table 3 Hierarchical OLS Results (HC3)

Term	B	HC3_SE	p
Intercept	0.068	0.742	0.927
Product	0.086	0.058	0.142
Price	0.016	0.057	0.779
Place	-0.023	0.048	0.637
Promotion	0.068	0.044	0.125
Physical evidence	-0.007	0.053	0.895
People	0.032	0.076	0.675
Process	0.003	0.069	0.968

➢ *Necessity Analysis*

No single condition met conventional thresholds for necessity (consistency ≥ .90). Satisfaction at OYDC does not depend on any single P in isolation. This is consistent with equifinality and conjunctural causation (i.e., satisfaction is recipe-based, not single-driver).

Table 4 fsQCA Necessity Analysis (Presence & Absence)

Condition	Type	Consistency	Coverage
PROC	Presence	0.815	0.657
PROD	Presence	0.812	0.702
PEOP	Presence	0.791	0.696

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PRICE	Presence	0.79	0.68
PROM	Presence	0.767	0.669
PHYS	Presence	0.725	0.677
PLACE	Presence	0.712	0.68
~PLACE	Absence	0.69	0.59
~PHYS	Absence	0.677	0.59
~PEOP	Absence	0.647	0.597
~PROD	Absence	0.627	0.591
~PRICE	Absence	0.623	0.59
~PROM	Absence	0.611	0.57
~PROC	Absence	0.59	0.603

➢ *Configurations for High Satisfaction*

Multiple distinct sufficient configurations emerged. Overall solution consistency ≈ .83–.88 (across calibrations), coverage ≈ .50–.66. These findings results demonstrate equifinality: there are multiple distinct "recipes" leading to high satisfaction. They also show compensation/substitution (e.g., ~PROM in S4 and ~PHYS in S5), illustrating conjunctural causation and causal asymmetry.

Table 5 fsQCA Minimized Sufficient Configurations

Solution	Configuration (minimized)	Consistency	Raw coverage
S1	PHYS*PLACE*PRICE*PROD*PROM	0.871	0.471
S2	PLACE*PRICE*PROC*PROD*PROM	0.862	0.481
S3	PEOP*PHYS*PLACE*PRICE*PROC*PROM	0.855	0.435
S4	PEOP*PHYS*PRICE*PROC*PROD*~PROM	0.83	0.34
S5	PEOP*PRICE*PROC*PROD*PROM*~PHYS	0.854	0.381

➢ *Low Satisfaction*

Low satisfaction exhibited multiple distinct pathways, not simple inverses of high-satisfaction configurations, confirming causal asymmetry.

V. DISCUSSION

This study examined whether customer satisfaction in a sport-service context is better explained through additive net-effects logic or configurational causation. Rather than positioning these approaches as mutually exclusive, the findings suggest that they illuminate different layers of the same phenomenon. Regression analysis identifies marginal tendencies - most notably the central role of Product - while configurational analysis reveals that satisfaction emerges from coherent combinations of marketing mix elements. Taken together, the results indicate that the 7Ps operate less as independent drivers and more as an interdependent architecture of value creation.

➢ *Reinterpreting the 7Ps as Configurational Systems*

The dominant interpretation of the 7Ps treats each element as an independent predictor of satisfaction. However, the absence of any necessary condition and the presence of multiple sufficient configurations indicate that satisfaction does not arise from additive accumulation alone. Instead, it materializes when particular constellations of Product, People, Process, and Physical Evidence align coherently.

Configurational theory emphasizes conjunctural causation - the effect of one condition depends on its combination with others (Fiss, 2011; Ragin, 2008). The findings empirically support this logic: Product remains influential in regression, yet it only produces high satisfaction when embedded within supportive operational and relational contexts. This shifts the theoretical emphasis from "which P matters most?" to "which combinations produce internal coherence?"

Service systems theory (Grönroos, 2007) posits that customers evaluate services holistically. The present evidence extends this view by suggesting that holistic evaluation reflects structural alignment across marketing mix elements. Satisfaction therefore appears less as a response to attribute-level excellence and more as a judgment of systemic coherence.

Expectation - confirmation theory (Oliver, 1980) can be reinterpreted through this lens. Rather than confirming isolated attributes, customers may confirm or disconfirm the overall logic of the service configuration. Confirmation thus operates at a patterned level: the experience is evaluated against an anticipated service architecture. This configurational extension of ECT suggests that expectation formation and confirmation processes may themselves be conjunctural.

Collectively, these findings reconceptualize the 7Ps from a dimension-based explanatory model to a systemic design framework characterized by multiple viable alignments.

➢ *Substitution and Compensation Logic*

The configurational solutions reveal that strong People and Process conditions frequently co-occur with high satisfaction - even when other elements are weaker. This

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suggests compensatory dynamics rather than strict complementarity.

Service quality research distinguishes technical and functional quality (Grönroos, 2007). The present findings indicate that functional elements (e.g., employee interaction, operational reliability) may stabilize satisfaction even when promotional intensity or tangibility is less pronounced. This does not imply irrelevance of peripheral elements; rather, it indicates conditional substitutability.

From a theoretical standpoint, this refines the 7Ps by embedding a relational logic of compensation. Satisfaction is achieved not through uniform maximization but through adequacy of the overall configuration. This challenges the implicit managerial assumption that all Ps must be optimized simultaneously and instead positions service systems as adaptive structures capable of rebalancing performance dimensions.

- *Contribution to the Symmetric - Asymmetric Debate*

The divergence between OLS and fsQCA findings contributes to ongoing discussions about symmetric and asymmetric modeling (Woodside, 2013). Regression results identify Product as the most consistent marginal predictor. However, configurational analysis reveals multiple sufficient pathways and demonstrates that no single element is necessary.

This supports causal asymmetry: the presence of a condition in high-satisfaction cases does not imply its absence in low-satisfaction cases (Fiss, 2011). Satisfaction and dissatisfaction are structurally distinct phenomena. Additive models capture average partial effects, while configurational models uncover structural patterns.

Importantly, the study does not displace symmetric modeling; rather, it demonstrates methodological complementarity. Marginal effects identify influential conditions, whereas configurational analysis reveals how those conditions operate jointly. Theoretical development in service marketing may therefore benefit from explicitly integrating both lenses.

- *Emerging Economy Service System Insights*

The emerging economy context provides meaningful boundary conditions. Institutional environments characterized by infrastructural variability and resource constraints (Khanna & Palepu, 2010) may amplify adaptive and compensatory dynamics.

The evidence suggests that satisfaction in this context depends on coherent recombination of available resources rather than uniform optimization. However, caution is warranted: the study does not compare emerging and developed markets directly. Instead, it suggests that configurational logic may be particularly salient where service systems operate under variability and constraint.

This extends institutional theory into service marketing by showing how environmental conditions shape the structural logic of satisfaction formation. The marketing mix functions as an adaptive configuration responsive to contextual realities.

VI. CONCLUSION

This study demonstrates that customer satisfaction in a sport-service context is best understood as a configurational outcome rather than solely an additive function of independent marketing mix elements. By integrating hierarchical regression and fsQCA, the research shows that while Product exerts a strong marginal influence, high satisfaction consistently arises from coherent combinations of core, relational, operational, and tangible elements.

Theoretically, the study reconceptualizes the 7Ps as an interdependent system of value creation characterized by conjunctural causation and compensatory dynamics. Satisfaction emerges from structural alignment rather than isolated dominance. This reframing advances service marketing theory by shifting emphasis from identifying singular drivers to understanding systemic coherence.

Methodologically, the study contributes to the symmetric - asymmetric debate by demonstrating that marginal effects and configurational pathways capture complementary dimensions of causal explanation. Configurational analysis reveals equifinality and causal asymmetry that symmetric models alone cannot detect.

Contextually, evidence from an emerging economy sport-service setting suggests that adaptive recombination of marketing mix elements plays a critical role in satisfaction formation under institutional variability.

Future research should extend configurational logic longitudinally, compare across institutional contexts, and explore how configurations evolve over time. Integrating structural equation modeling with set-theoretic approaches may further illuminate dynamic service architectures.

VII. MANAGERIAL IMPLICATIONS

The findings indicate that satisfaction should be managed as a systemic property rather than as the outcome of isolated marketing improvements.

First, managers should prioritize configurational coherence. Investments in Product, People, Process, and Physical Evidence must reinforce one another rather than operate independently. Strategic alignment across functions is more critical than incremental improvements in single dimensions.

Second, compensatory dynamics suggest that organizations can stabilize satisfaction by strengthening structural stabilizers - particularly frontline interaction quality and operational reliability - when infrastructural or promotional constraints exist.

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Third, managers should monitor misalignment risk. Dissatisfaction appears linked not merely to weak performance but to incoherent configurations - such as strong promotional promises unsupported by process reliability.

Fourth, in resource-constrained environments, strategic recombination of existing strengths may yield greater returns than broad resource dispersion. The marketing mix should be managed as a reconfigurable system capable of adaptation while maintaining internal integrity.

In essence, service excellence emerges from managing patterns, not individual levers.

REFERENCES

[1]. Booms, B. H., & Bitner, M. J. (1981). Marketing strategies and organization structures for service firms. In J. H. Donnelly & W. R. George (Eds.), *Marketing of services* (pp. 47–51). American Marketing Association.

[2]. Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal, 54*(2), 393–420. https://doi.org/10.5465/amj.2011.60263120

[3]. Grönroos, C. (2007). *Service management and marketing: Customer management in service competition* (3rd ed.). Wiley.

[4]. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis* (8th ed.). Cengage.

[5]. International Olympic Committee. (2016). *Olympic Youth Development Centre Zambia: Sport for hope programme report*. IOC.

[6]. Khanna, T., & Palepu, K. G. (2010). *Winning in emerging markets: A road map for strategy and execution*. Harvard Business Press.

[7]. Lindsey, I., & Grattan, A. (2012). An 'international movement'? Decentring sport-for-development within Zambian communities. *International Journal of Sport Policy and Politics, 4*(1), 91–110. https://doi.org/10.1080/19406940.2011.627360

[8]. Ministry of Youth, Sport and Child Development. (2019). *National sports policy of Zambia*. Government of the Republic of Zambia.

[9]. National Olympic Committee of Zambia. (2020). *Strategic plan and development framework*. NOCZ.

[10]. Oliver, R. L. (1980). A cognitive model of the antecedents and consequences of satisfaction decisions. *Journal of Marketing Research, 17*(4), 460–469. https://doi.org/10.1177/002224378001700405

[11]. OYDC Zambia. (2021). *Annual report and programme overview*. Olympic Youth Development Centre Zambia.

[12]. Ragin, C. C. (2008). *Redesigning social inquiry: Fuzzy sets and beyond*. University of Chicago Press.

[13]. Schulenkorf, N. (2017). Managing sport-for-development: Reflections and outlook. *Sport Management Review, 20*(3), 243–251. https://doi.org/10.1016/j.smr.2016.11.003

[14]. Woodside, A. G. (2013). Moving beyond multiple regression analysis to algorithms: Calling for adoption of a paradigm shift from symmetric to asymmetric thinking in data analysis and crafting theory. *Journal of Business Research, 66*(4), 463–472. https://doi.org/10.1016/j.jbusres.2012.12.021

[15]. Zeithaml, V. A., Berry, L. L., & Parasuraman, A. (1996). The behavioral consequences of service quality. *Journal of Marketing, 60*(2), 31–46. https://doi.org/10.1177/002224299606000203