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ORGANIZATIONAL CULTURE AND THE LINK BETWEEN WORK VALUE MANAGEMENT AND ORGANIZATIONAL SUSTAINABILITY: ZERO-ORDER AND PARTIAL CORRELATION EVIDENCE FROM NIGERIAN CONSTRUCTION FIRMS

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Abstract

This paper examines how the relationship between work value management and organizational sustainability behaves once organizational culture is taken into account in construction companies in Port Harcourt, Nigeria. Survey data were obtained from 130 managerial and supervisory staff (86.1% response) of seven construction firms using a four-point, closed-ended questionnaire. Work value management, organizational sustainability (profitability and patronage) and organizational culture were each measured with multi-item scales. Analysis combined descriptive statistics, zero-order Pearson correlations and first-order partial correlations, supplemented by derived second-order quantities (the reverse partial correlations, shared and unique variance, and a sensitivity grid). Respondents reported high levels of work value management ($M = 3.49$), organizational sustainability ($M = 3.46$) and a supportive culture ($M = 3.54$). The zero-order correlation between work value management and organizational sustainability was $r = .990$ ($p < .001$). Controlling for organizational culture reduced it only slightly, to $r = .956$ ($p < .001$), so the association is robust to culture. Culture was strongly correlated with both variables at zero order ($r = .931$ and $.900$), but its association with sustainability became negative once work value management was controlled (partial $r = -.42$), indicating that culture and work value management overlap heavily and that the practices measured here carry almost all of the explanatory weight. The paper shows what partial-correlation evidence can and cannot say about the contextual role of culture, distinguishes statistical control from a formal moderation test, and sets out the design needed to test moderation properly. Implications are drawn for managers and researchers in people-intensive project industries.

***Keywords*:** Organizational culture; work value management; organizational sustainability; partial correlation; moderation; construction industry.

1. Introduction

Why do two firms that adopt similar management practices end up with different results? A recurrent answer in the organizational literature is culture, the set of values, beliefs and behavior patterns that distinguish one organization from another (Ortega-Parra and Sastre-Castillo, 2013), or, in a simpler formulation, the way things are done here. Culture is said to shape how members interpret practices, whether they trust the messages of management and how they behave when no one is watching (Schein, 2010). If this is so, the effect of any people-management practice on the survival of the firm should depend, at least in part, on the cultural environment in which it is applied.

This proposition is particularly relevant to the study of work value management, by which we mean the managerial practices that recognize, communicate, assess and reward the value that employees bring to work. In a companion analysis of the same data, four dimensions of work value management, namely goal communication, skills evaluation, collaboration analysis and stakeholders' gain, were each found to be strongly related to the profitability and patronage of construction firms. That analysis treated the dimensions separately. The present paper takes a different perspective. It treats work value management as a single construct, treats organizational sustainability as the combination of profitability and patronage, and asks what role organizational culture plays in the relationship between the two.

The distinction matters for both theory and practice. If culture strengthens or conditions the effect of work value management, managers need to attend to culture before introducing new practices. If culture merely correlates with the practices because strong cultures and good practices tend to co-occur, then the practical priority is to improve the practices themselves. Distinguishing between these possibilities requires care in analysis, and care in the language used to describe what the analysis can show. A partial correlation, for example, tells us whether the association between two variables survives statistical control of a third. It does not, on its own, show that the third variable moderates (changes the strength of) the relationship, for which an interaction term or a subgroup comparison is required (Baron and Kenny, 1986).

The paper makes three contributions. First, it provides descriptive evidence on how work value management, sustainability and culture are perceived in a sector where project quality is public and enduring. Second, it presents zero-order and partial correlations and derives additional quantities from them, including the reverse partials and a decomposition of shared variance, which give a fuller picture of how the three variables are related. Third, it is explicit about the inferential limits of the evidence, which is important because the correlations involved are exceptionally high. The paper proceeds as follows: Section 2 develops the conceptual background and hypotheses; Section 3 describes the methodology; Section 4 presents the data analysis; Section 5 discusses the results; and Section 6 concludes.

2. Conceptual Background and Hypotheses

2.1 Organizational sustainability

Sustainability in an organizational setting refers to the capacity to continue and constantly improve activities in pursuit of a defined mission. It implies attention to economic, social and environmental performance at the same time (Colbert and Kurucz, 2007) and is better understood as an ongoing process than as a final state. Two outcomes are of particular importance to construction firms. The first is profitability, defined as the ability of a firm to generate earnings and regarded as the survival indicator of the firm (Gibson, 1998). The second is patronage, the readiness of clients to continue to award work to the firm, which in

construction depends on the perceived durability and quality of previous projects. The first speaks to the ability of the firm to fund its continued existence; the second speaks to the willingness of the market to let it do so.

2.2 Work value management

Value management is concerned with the creation of sustainable value and with balancing the needs of stakeholders and the resources required to satisfy them. When applied to the workforce, it recognizes that employees come to organizations with their own values and goals, that these may conflict with the values of the organization, and that leaders must manage this tension deliberately. Four sets of practices are included in the present study: communicating organizational goals so that members understand what they are working toward (Locke and Latham, 2002; Mullins, 1999); evaluating skills so that the abilities of workers are known and developed (Biggs, 1999; Boud, 1995); analysing collaboration so that groups can solve problems jointly (Dillenbourg, 1999); and attending to the gains of stakeholders on whom the survival of the firm depends (Clarkson, 1995; Freeman, 1984).

Motivation theory supports the expectation that such practices improve performance. Maslow (1943) emphasizes the satisfaction of needs ranging from security to esteem and self-actualization; Herzberg, Mausner and Snyderman (1959) separate motivators from hygiene factors; and Vroom (1964) shows how the perceived relationship between effort, performance and reward directs effort. Employees who feel that their inputs, such as effort, commitment, loyalty and enthusiasm, are fairly rewarded by outputs such as financial and non-financial benefits stay motivated and keep producing, with positive consequences for organizational sustainability.

2.3 Organizational culture

Culture is the way a particular group of people behaves, and organizational culture is the way a particular organization does things. Schneider, Ehrhart and Macey (2013) describe it as the norms that members experience and describe as their work setting. Culture has several sources, including the ideas of founders, the learning experiences of group members and the beliefs introduced by new managers (Uddin, Luva and Hossain, 2013). In a strong culture, members share the values and goals of the organization and new employees quickly adopt them (Kotter and Heskett, 1992). In a weak culture, communication is unclear, employees behave in ways that are inconsistent with organizational priorities and the existence of the organization can be put at risk (Schein, 2010; Flamholtz and Randle, 2011).

A sizeable literature relates culture to performance. Denison (1990) explained the effects of culture on business performance, and later quantitative and case-study evidence has reported positive relationships between culture and performance (Hartnell, Ou and Kinicki, 2011). In particular, strong culture has been linked to profitability and financial performance, and weak culture to lower productivity. Customers and other stakeholders also use the culture of the organization, as displayed in the behavior of its members, to distinguish good organizations from bad ones.

2.4 Culture and work value management: three possible roles

Three distinct roles for culture are conceivable and each makes different predictions for the correlations among the three variables. *Culture as moderator*: the effect of work value management on sustainability is stronger in strong cultures than in weak cultures. This would be detected by an interaction term or by different correlations in high-culture and low-culture subgroups. *Culture as common cause or correlate*: strong culture and good practices go

together, so that part of the apparent relationship between practices and sustainability is due to their shared association with culture. This would be detected by a clear reduction in the correlation when culture is held constant. *Culture as a downstream or overlapping construct*: culture is partly produced by the same practices, so that controlling for it removes only a small amount of the practice effect and the culture–outcome link disappears once practices are controlled. Partial correlations can discriminate between the second and third roles, and can provide a first indication for the first, but cannot test it directly. The hypotheses below are stated accordingly.

H1: Work value management is positively and significantly related to organizational sustainability.
H2: Organizational culture is positively and significantly related to work value management.
H3: Organizational culture is positively and significantly related to organizational sustainability.
H4: The relationship between work value management and organizational sustainability remains positive and significant when organizational culture is statistically controlled.

An additional exploratory question is whether, after controlling for work value management, culture retains any association with sustainability (H5, exploratory: the partial correlation between culture and sustainability controlling for work value management differs from zero).

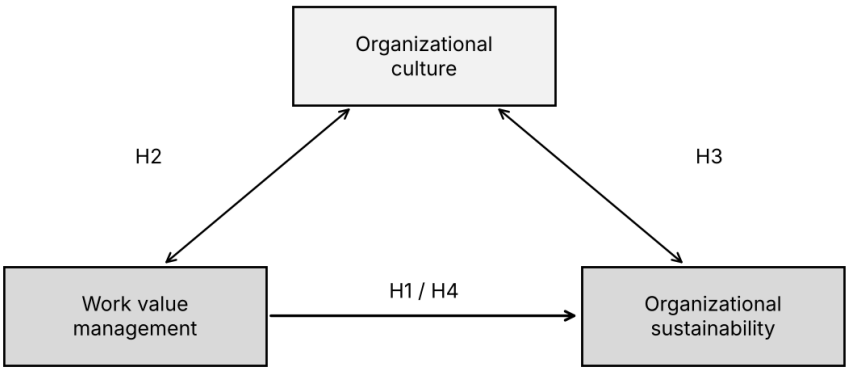


Figure 1: Analytical model: culture is examined as a correlate whose statistical control tests the robustness of the work value management–sustainability link

3. Methodology

3.1 Research design and philosophy

The study followed a cross-sectional survey design within a realist philosophy, which assumes that organizational practices and cultures exist independently of our perception of them but can be studied through systematically collected, transparent evidence (Bhaskar, 1999). The design suits the objective of describing perceptions at a given time and estimating associations among variables. It does not allow causal ordering to be established, and the interpretation of results in Section 5 is limited accordingly.

3.2 Setting, population and sampling

The study was conducted among seven leading construction companies operating in Port Harcourt, Rivers State, Nigeria, identified through a business listing and a Nigerian online directory. The population comprised 151 managerial and supervisory staff (92 managerial and 59 supervisory), who were selected because their positions give them authority to enforce

administrative procedures that govern the management of the workforce. A census was used, so that the entire accessible population was surveyed and sampling error was eliminated. The distribution of staff by firm is summarized in Table 1.

Table 1: Study population by company

Company	Managerial	Supervisory	Total
Setraco Nigeria Ltd	12	5	17
LCC	13	7	20
MCC	11	9	20
Julius Berger	15	13	28
CCECC	13	10	23
RCC	14	8	22
Rivigo	14	7	21
Total	92	59	151

Source: Sampling frame compiled by the researchers (2021).

3.3 Measures

Data were collected with a self-developed, closed-ended questionnaire with a demographic section and sections for each study construct. All substantive items used a four-point response format: very high extent (4), high extent (3), low extent (2) and very low extent (1). Each of the following constructs was measured with four items:

- *Work value management:* goal communication, skills evaluation, collaboration analysis and stakeholders' gain (four items each, 16 items in total). The composite score is the mean of the four-dimension scores.
- *Organizational sustainability:* profitability (four items) and patronage (four items); the composite is the mean of the two measures.
- *Organizational culture:* four items on the extent to which culture enhances customer satisfaction, customer patronage, employee behavior toward customers and customer service relationships.

The culture items are therefore customer-oriented, and the construct is best read as a service-oriented culture and not as a comprehensive measure of all cultural dimensions. The validity of the instrument was examined through the review of the draft by the research supervisor and experts in the field (face and content validity). Reliability was assessed with Cronbach's alpha, using a threshold of .72, and a test–retest pilot administered after two months.

3.4 Procedure

Questionnaires were delivered to each company with a cover letter from the Postgraduate School of Rivers State University, which explained the academic purpose of the study and the confidentiality of responses. Completed forms were deposited at reception and collected later. Participation was voluntary and respondents were not asked to identify themselves.

3.5 Analytical strategy

The analysis comprised four steps. *Step 1* described the sample and the distribution of responses using frequencies, percentages, means and standard deviations. A criterion mean of 2.50 distinguished substantial agreement from inadequate extent on the four-point scale. *Step 2* estimated zero-order Pearson correlations among the three composite variables (denoted X = work value management, Y = organizational sustainability and Z = organizational culture)

and tested them at the 0.05 level (two-tailed, df = 128). *Step 3* estimated the first-order partial correlation between X and Y controlling for Z, given by

$$r(XY{\cdot}Z) = [r(XY) - r(XZ){\cdot}r(YZ)] / \sqrt{\{[1 - r(XZ)^2][1 - r(YZ)^2]\}},$$

with n − 3 = 127 degrees of freedom. A comparison of r(XY) with r(XY·Z) shows how much of the apparent relationship is associated with Z. *Step 4* derived, algebraically from the zero-order matrix, the two reverse partial correlations r(XZ·Y) and r(YZ·X), the multiple correlation of Y on X and Z, and the unique contribution of Z to explained variance, expressed as the squared semi-partial correlation:

$$R^2(Y{\cdot}XZ) = [r(XY)^2 + r(YZ)^2 - 2{\cdot}r(XY){\cdot}r(YZ){\cdot}r(XZ)] / [1 - r(XZ)^2]; \quad sr^2(Z) = R^2(Y{\cdot}XZ) - r(XY)^2.$$

Confidence intervals for correlations were computed with the Fisher z transformation, with standard error $1/\sqrt{(n - 3 - k)}$, where k is the number of controlled variables. Because step 4 uses reported coefficients, the derived values depend on the accuracy of those coefficients and are labelled as derived in the tables. A sensitivity analysis (Section 4.6) shows how the partial correlation would change under alternative values of the zero-order correlation. All primary statistics were produced in SPSS version 20.0.

3.6 A note on moderation

A formal moderation test would require a product term (X × Z) in a regression predicting Y, with the interaction coefficient tested for significance, or a comparison of the X–Y correlation across groups defined by high and low Z. The study did not retain respondent-level data in that form for this paper, and therefore the analysis is restricted to partial correlation. We accordingly use the language of statistical control and of the contextual role of culture, and refrain from claiming a moderation effect in the strict sense.

4. Data Analysis and Results

4.1 Response rate and respondent profile

Out of 151 questionnaires distributed, 130 usable questionnaires were retrieved, a response rate of 86.1%; 21 questionnaires (13.9%) were not returned because of work schedules. The respondent profile is summarized in Table 2. The respondents are mature (53.8% aged 41 and above) and well qualified (every respondent held at least a first degree, with 57.7% holding B.Tech degrees), and predominantly male (69.2%) and married (65.4%). This profile suggests respondents had the experience to assess practices and culture in their organizations.

Table 2: Respondent profile (N = 130)

Characteristic	Category	n	%
Age	30–35 years	15	11.5
	36–40 years	30	23.1
	41–45 years	48	36.9
	46–50 years	22	16.9
	51–60 years	15	11.5
Gender	Male	90	69.2
	Female	40	30.8
Marital status	Single	45	34.6
	Married	85	65.4
Qualification	B.Tech	75	57.7
	B.Sc / LL.B	30	23.1
	M.Sc	15	11.5
	Ph.D.	10	7.7

Source: Field survey (2021).

4.2 Reliability

Table 3: Cronbach's alpha for the measures

Measure	Items	Alpha
Goal communication	4	.992
Skills evaluation	4	.991
Collaboration analysis	4	.993
Stakeholders' gain	4	.991
Profitability	4	.991
Patronage	4	.992
Organizational culture	4	.993

Source: SPSS output (2021).

All measures exceeded the .72 benchmark, with coefficients between .991 and .993. Alpha values above approximately .90 are generally taken to indicate not only excellent consistency but possible item redundancy (Tavakol and Dennick, 2011). In the present data they signal that respondents answered the items within each scale almost identically. This matters for the later interpretation of the very high correlations.

4.3 Descriptive results

Table 4: Descriptive statistics for the three study variables (N = 130)

Variable	Mean	Reading (criterion 2.50)
Work value management (composite of four dimensions)	3.49	High extent
Organizational sustainability (profitability and patronage)	3.46	High extent
Organizational culture (service-oriented)	3.54	High extent

Source: Field survey (2021); composite means as reported in the SPSS summary.

All three variables obtained means well above the criterion value of 2.50. Respondents rated organizational culture (M = 3.54) slightly higher than work value management (M = 3.49)

and organizational sustainability (M = 3.46), but the differences are small. The uniformly high level has an important statistical consequence: with scores concentrated in the upper part of a four-point scale, there is limited variation for correlations to explain, and a small number of respondents with low scores can have a large effect on the coefficients.

The item-level results for organizational culture are shown in Table 5. Culture items attracted some of the highest endorsement rates of the study: between 94.6% and 100% of respondents chose *very high extent* or *high extent* for each item. No respondent chose the lowest category for items 2 and 3, and no respondent chose either of the two lowest categories for item 2, which makes the culture measure among the least dispersed in the study.

Table 5: Item responses on organizational culture

Item	VHE	HE	LE	VLE	Mean	SD	% VHE+HE
OC1. Culture enhances customers' satisfaction	71	55	2	2	3.50	0.61	96.9
OC2. Culture change enhances customers' patronage	85	45	0	0	3.65	0.48	100.0
OC3. Culture shapes employee behavior toward customers' satisfaction	77	51	2	0	3.58	0.53	98.5
OC4. Culture enhances effective customer service relationships	68	55	4	3	3.45	0.67	94.6

VHE = very high extent; HE = high extent; LE = low extent; VLE = very low extent. SD recomputed from response frequencies. Source: Field survey (2021).

Table 6: Construct means, item ranges and average agreement

Construct	Mean	Item-mean range	Mean % VHE+HE
Goal communication	3.39	3.31–3.44	84.6
Skills evaluation	3.46	3.39–3.54	87.1
Collaboration analysis	3.60	3.50–3.81	91.9
Stakeholders' gain	3.62	3.47–3.69	91.2
Profitability	3.59	3.46–3.69	92.9
Patronage	3.46	3.38–3.56	89.2
Organizational culture	3.54	3.45–3.65	97.5

Construct mean is the average of four item means. Source: Field survey (2021).

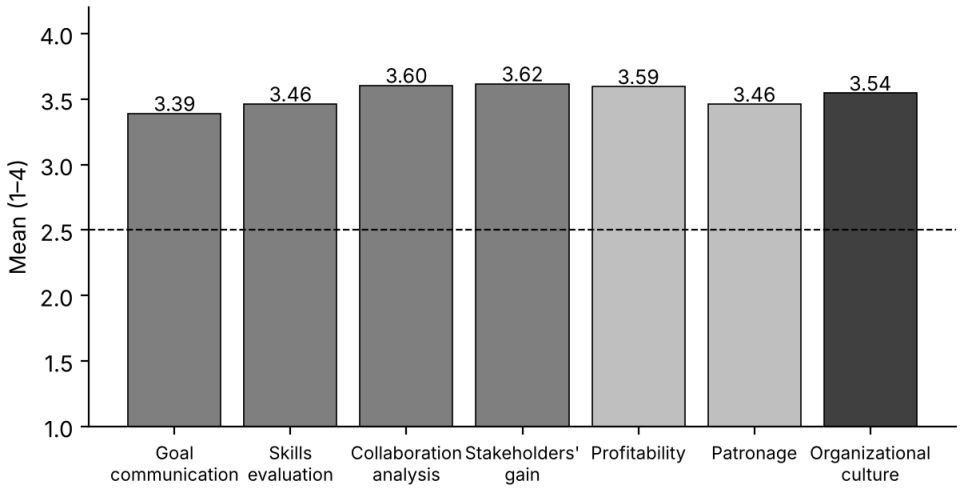


Figure 2: Construct means (dark grey: culture; mid grey: work value management dimensions; light grey: sustainability measures). The dashed line is the criterion mean of 2.50.

Table 6 and Figure 2 show a narrow spread of means across constructs (3.39 to 3.62). Stakeholders' gain and collaboration analysis were the highest-rated practices, and goal communication was the lowest. The item-mean ranges show that goal communication also has the widest within-construct variation, which suggests that the communication of goals is applied less uniformly than the other practices.

4.4 Zero-order correlations and tests of H1–H3

Table 7: Zero-order Pearson correlations among the study variables (N = 130, df = 128)

Pair	r	r^2	t	95% CI	p	Hypothesis	Decision
WVM – Sustainability	.990	0.980	79.4	[0.986, 0.993]	< .001	H1	Supported
WVM – Culture	.931	0.867	28.9	[0.904, 0.951]	< .001	H2	Supported
Sustainability – Culture	.900	0.810	23.4	[0.861, 0.928]	< .001	H3	Supported

WVM = work value management. Two-tailed tests; CIs by Fisher z. Source: SPSS output (2021) and authors' computations.

The three variables are strongly and positively intercorrelated. Work value management is almost perfectly correlated with organizational sustainability ($r = .990$, $p < .001$), which supports H1. Work value management also correlates strongly with organizational culture ($r = .931$, $p < .001$; H2) and culture with sustainability ($r = .900$, $p < .001$; H3). The confidence intervals are narrow, and none comes close to including zero. In terms of shared variance, work value management accounts for 98.0% of the variance in sustainability in these data, culture for 81.0%, and work value management and culture share 86.7% of their variance.

4.5 Partial correlations and tests of H4 and H5

Table 8: Partial correlations among work value management (X), sustainability (Y) and culture (Z)

Relationship	Control	Zero-order r	Partial r	df	p	Source
X – Y	none	0.990	–	128	< .001	SPSS
X – Y	Z (culture)	0.990	0.956	127	< .001	SPSS
X – Z	Y (sustainability)	0.931	0.651	127	< .001*	Derived
Y – Z	X (work value mgmt)	0.900	-0.421	127	< .001*	Derived

*Derived values are computed algebraically from the zero-order matrix. *Significance computed from $t = r\sqrt{df}/\sqrt{(1 - r^2)}$ and is consistent with $p < .001$. Source: SPSS output (2021) and authors' computations.*

H4. Controlling for organizational culture reduced the correlation between work value management and sustainability from r = .990 to r = .956 (95% CI [0.938, 0.969], t(127) = 36.7, p < .001). The association therefore remains very strong and significant once culture is held constant, and H4 is supported. The reduction is 0.034 in r, and in variance terms it corresponds to a fall in shared variance from 98.0% to 91.4%, a loss of 6.6 percentage points of the variance of sustainability that was jointly associated with work value management and culture. Roughly 93% of the zero-order association survives control of culture (.956/.990 = 96.6% in r terms; 93.3% in r^2 terms).

H5 (exploratory). The reverse partial correlations are informative. After work value management is controlled, culture is no longer positively related to sustainability: the partial correlation is r = -0.42, which is negative. By contrast, after sustainability is controlled, culture remains positively related to work value management (r = 0.65). The multiple correlation of sustainability on both work value management and culture gives $R^2 = 0.984$, so adding culture to work value management raises the explained variance only from .980 to 0.984, a unique contribution of $sr^2 = 0.004$, or about 0.4% of the variance in sustainability.

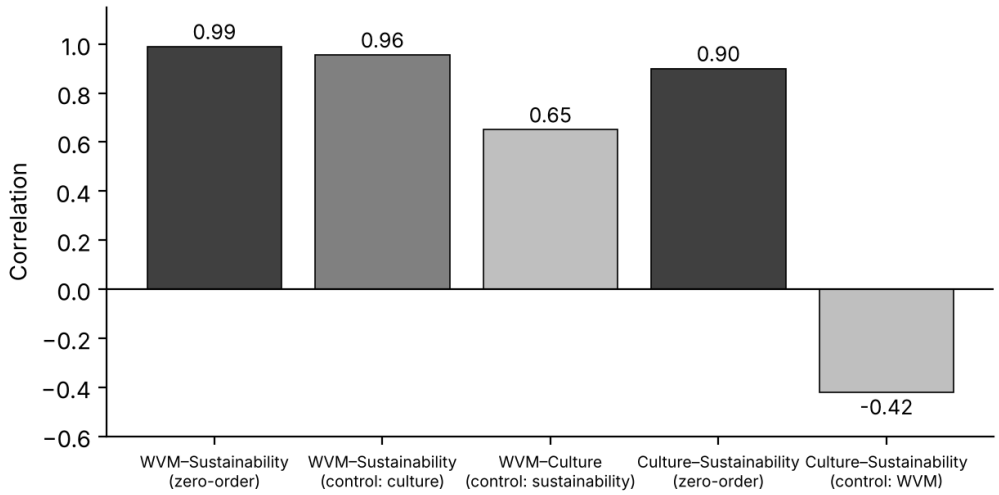


Figure 3: Zero-order and partial correlations among work value management (WVM), culture and organizational sustainability

The pattern in Figure 3 is clear. The work value management–sustainability link is large under every specification. The culture–sustainability link is large at zero order but reverses

sign when work value management is controlled. This is the signature of a variable (culture) whose apparent relationship with the outcome is carried almost entirely by its overlap with another (work value management). The small negative partial coefficient should not be read as evidence that culture harms sustainability: it is what one expects when two predictors correlate at .93 and the outcome is nearly perfectly predicted by one of them, a situation in which small differences between the two are amplified.

4.6 Sensitivity analysis

Because the coefficients are so high, it is useful to ask how the partial correlation would behave if the zero-order work value management–sustainability coefficient were lower, holding the correlations with culture constant at the observed values (.931 and .900). Table 9 shows the results; they are illustrative and not estimates.

Table 9: Sensitivity of the partial correlation r(XY·Z) to the zero-order r(XY), holding r(XZ) = .931 and r(YZ) = .900

Assumed r(XY)	Partial r(XY·Z)	Change (r − partial)
0.99	0.956	+0.034
0.97	0.830	+0.140
0.95	0.705	+0.245
0.93	0.579	+0.351
0.90	0.390	+0.510
0.87	0.202	+0.668

Illustrative computation by the authors.

When the zero-order coefficient is .99, controlling for culture reduces it modestly. When the zero-order coefficient is .93 or lower, the same control reduces it by a large amount, and when the zero-order coefficient falls to about .84 (the product of the two culture correlations, .931 × .900) the partial correlation falls to zero, because culture alone would then account for the whole association. The observed result of .956 therefore depends on the near-perfect zero-order link between work value management and sustainability. If measurement overlap or common-method variance has inflated that coefficient, the true contribution of work value management over and above culture would be smaller than the figures suggest.

4.7 Decision summary

Table 10: Summary of hypothesis tests

Hypothesis	Statistic	Decision
H1: WVM and sustainability are positively related	r = .990, p < .001	Supported
H2: Culture and WVM are positively related	r = .931, p < .001	Supported
H3: Culture and sustainability are positively related	r = .900, p < .001	Supported
H4: WVM–sustainability link persists controlling for culture	partial r = .956, p < .001	Supported
H5 (exploratory): culture–sustainability link after controlling WVM	partial r = -0.42	Not positive; association not retained

Source: Authors' computations (2021).

5. Discussion

5.1 What the results say about the contextual role of culture

The results support the view that work value management and organizational sustainability are strongly related and that this relationship is robust to the statistical control of culture. They do not support a strong version of the claim that culture accounts for the relationship, because the association drops only from .990 to .956. In terms of the three roles outlined in Section 2.4, the pattern is closest to the third: culture overlaps substantially with work value management (r = .931) and its association with sustainability is largely accounted for by that overlap, whereas the practices retain an independent and very large association with the outcome. This is consistent with a reading in which the practices measured here, communicating goals, evaluating skills, analysing collaboration and attending to stakeholders, are themselves expressions of a service-oriented culture, so that the two constructs are partly the same thing observed from different angles.

The claim that culture moderates the relationship, which is sometimes inferred when the partial correlation differs from the zero-order correlation, needs to be treated with care. A difference between the two shows that culture shares variance with the other variables. It does not show that the strength of the relationship varies across levels of culture. A formal moderation test would examine whether the work value management–sustainability slope differs between organizations or respondents with weaker and stronger cultures. Given that scores are concentrated at the top of the scale (M = 3.54 for culture; 94.6–100% endorsement), there is little variation in culture to moderate anything in this sample. This is a constraint of the data and of the construct, not a finding that culture is unimportant.

5.2 Consistency with the literature

The strong zero-order associations of culture with both practices and outcomes agree with earlier findings that strong cultures are linked to better organizational performance (Denison, 1990; Hartnell, Ou and Kinicki, 2011) and with the argument that culture aligns organizational direction by encouraging members to share values and goals (Kotter and Heskett, 1992). They are also in line with the view that weak culture is accompanied by unclear communication and inconsistent behavior (Schein, 2010; Flamholtz and Randle, 2011). The additional contribution of the present analysis is to show that, in this sample, once the concrete practices of work value management are accounted for, culture adds very little to the explanation of sustainability. This is compatible with the idea that culture influences performance largely through the behaviors and practices that it produces, and not directly. It also fits motivation theory: Maslow's needs, Herzberg's motivators and Vroom's expectancies are all satisfied or frustrated through specific managerial acts, and a culture that does not produce those acts offers little to employees.

5.3 Interpreting the exceptionally high correlations

A coefficient of .99 would be remarkable in any behavioral study, and it would be a mistake to take it at face value. Several mechanisms probably contribute. Common-method variance is likely because all constructs were reported by the same respondents at the same time using the same scale (Podsakoff, MacKenzie, Lee and Podsakoff, 2003). Acquiescence is also plausible, since nearly all items are positively worded statements and respondents who generally agree will agree with all of them. Some items overlap conceptually: for example, the profitability scale includes items on skill evaluation and goal communication, which duplicate the content of the predictor scales, and the patronage scale includes an item on stakeholders. Finally, scores are compressed at the upper end of the scale, which is generally

associated with reduced independent variation. The alpha values of .991–.993 are consistent with items that function almost as repetitions of each other.

These considerations do not make the finding worthless, since the direction and approximate size of the association are consistent with theory. They do mean that the magnitude should be treated as an upper bound of the perceived association, and that conclusions should be expressed in terms of strong association and not precise effect size.

5.4 Implications for practice

- *Do not wait for culture to change before changing practices.* The practices retain a very strong association with sustainability after culture is controlled, which suggests that managers can act on communication, skills assessment, collaboration and stakeholder engagement directly.
- *Use practices to build culture.* Because culture overlaps strongly with the practices and loses its independent association with sustainability when they are controlled, culture is probably built through consistent managerial acts and not through declarations of values.
- *Align culture with the customer.* The culture measured here is customer-oriented. In a sector where patronage depends on the visible durability of work, firms should ensure that service-quality norms are reflected in everyday supervision and site practice.
- *Measure with care.* Firms that wish to monitor their own practices should combine employee perceptions with objective indicators, such as rework rates, repeat contracts and project margins.

5.5 Limitations

The study has several limitations beyond those already discussed. The design is cross-sectional and the data are perceptual, so causal ordering cannot be established. Only seven firms in one city were covered, and only managerial and supervisory staff took part. The organizational culture construct was narrow and customer-focused. Moderation was not tested formally. The analysis is at the level of the individual respondent, and firm-level clustering (respondents nested in seven companies) was not modelled; this may inflate correlations to the extent that firm-level differences drive scores. The reverse partial correlations were derived from rounded coefficients and should be read as approximate.

5.6 Agenda for future research

Future work should (i) test moderation formally using hierarchical regression with a centered interaction term, or multi-group analysis, in samples with greater variation in culture; (ii) model the nesting of respondents in firms with multilevel methods; (iii) use validated multi-dimensional culture instruments, for example those that distinguish involvement, consistency, adaptability and mission; (iv) collect outcome data from independent sources such as audited accounts and client records; (v) test mediation, in which work value management transmits the influence of culture to sustainability; and (vi) replicate the analysis in other project-based industries.

6. Conclusion

This paper examined the role of organizational culture in the relationship between work value management and organizational sustainability among 130 managerial and supervisory staff of seven construction companies in Port Harcourt, Nigeria. Respondents reported high levels of work value management, sustainability and a service-oriented culture. Work value management correlated almost perfectly with sustainability ($r = .990$), and the correlation remained very strong (partial $r = .956$) when culture was statistically controlled. Culture

correlated strongly with both variables at zero order but retained no positive association with sustainability once work value management was held constant, which indicates that its apparent influence is largely carried by the practices it overlaps with.

The study concludes that, in this sample, the management of employee work values is strongly associated with the sustainability of construction firms independently of the level of organizational culture, and that culture is best understood as closely intertwined with, and expressed through, those practices. The analysis does not establish moderation in the strict sense, and the magnitude of the correlations should be treated cautiously because of probable common-method and measurement-overlap effects. Stronger designs, including formal interaction tests, multilevel modelling and independent outcome data, are the logical next step.

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