

# Mediating Effect of Organisational Culture on the Relationship between Information System and Sustainable Performance of Manufacturing Companies in UAE

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**Abstract**— *The manufacturing sector is playing a growing role in UAE's economy. Using Structural Equation Modeling (SEM), this study has addressed the mediating effect of organisational culture on the relationship between information system and sustainable performance of manufacturing Companies in UAE. This is done by formulating, examining and establishing a research model linking the mediating relationships between Information System, Organisational Culture and Sustainable Performance experienced by the employees. The research hypotheses were tested in a cross-sectional survey of employees working in organisations in UAE. The results of this study indicate that increased levels of Support Decision System (SDS), lead to lower levels of Organisational Culture (OC).*

**Keywords:** *Organisational Culture, Sustainability Performance, Information System, UAE*

## I. INTRODUCTION

Organizations are increasingly interested in integrating public expectations into their business plans, not only in response to rising pressure from consumers, employees and other stakeholders but also in exploring opportunities to make competitive advantage. To date, management researchers have sought to identify a set of factors that have the potential to enable effective integration of organizational performance (Petrini & Pozzebon, 2010).

As Pamlin & Thorslund (2004) have noted, the major players in the IT / IS industry, have begun to seriously consider issues of resilience. You may have seen that this symbolizes a radical change in the way companies are, because the IT industry could have been seen more aware of the support needs of the last few years.

The manufacturing sector is playing a growing role in UAE's economy. This growing role is evident as presented in The Annual Economic Report 2015. The data shows that crude oil and natural gas extraction activities contributed approximately 34.3%, in terms of financial sector contribution to GDP, while both wholesale and retail trade

and repair services activities contributed 11.3%. , Real estate and business services contributed 10.3% each, and construction and manufacturing activities contributed nearly 9%.

Hamilton & Chervany (1981) in their main work "Evaluating Information System Effectiveness" determined that there are Two general views can be drawn about what is system effectiveness and how to measure it: the goal-centered view and the systems-resource view. In goal-focused, the way to evaluate the effectiveness of the system is to first determine the system's work goals, or the organizational units that use the system, and then develop benchmark measures to assess how well the goals are being achieved. Efficiency is determined by comparing performance to objectives. An example of a goal-centric view of systems effectiveness is comparing actual costs and benefits to budget costs and benefits. In the system-resource view, system effectiveness is determined by achieving a general state, e.g., standards of "good" practices. Efficiency is conceptualized about the feasibility of resources rather than related to specific work goals.

Over the past few years, many organizations have recognized the importance of sustainability and developed their own metrics, scorecards, ratings and tools to measure and track them. However, the term "sustainability" means different things depending on who you ask and what you want, and they all seem to have their own set of company-specific indicators, which vary widely in scope and scale. This lack of consistency leaves investors, consumers and the public at a disadvantage along with decision makers (Cohen & al, 2014).

According to the Environment Data Services sustain Sustainable Business Report (2011), businesses have "rapidly increased their ability to engage with sustainability", and an increasing number of employees and graduates have been identified as having consistent skills and knowledge. However, because organizations engage in sustainability they must do so, especially during times of financial distress (Wales, 2013).

However, despite the roles of IS and sustainability in manufacturing industry in UAE, yet there are many challenges that posed the main issues to the effective utilization of IS for the sustainable performance of manufacturing companies in UAE, these issues emanate as a result of higher degree of competition require strategic

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management of IS and sustainability, lack of readiness toward digital world as well as 4th industrial revolution (IR 4.0).

Hence, this study intend to find out the mediating effect of organisational culture on the relationship between information system and sustainable performance of manufacturing Companies in UAE.

## II. LITERATURE REVIEW

Palmius (2005) characterized the data framework as a shortened form for an association that adds to and shapes data conveyance. People are portions of the data framework as opposed to the clients of the data framework. There is nothing of the sort as a non-human correspondence framework, yet it is consummately conceivable to have a data framework without a solitary PC.

As indicated by Davis (2000), data frameworks incorporate data innovation foundation, application frameworks, and staff who use data innovation to give data and data administrations to exchange preparing, activities, organization, and the board of an association. As per Gu and Jung (2013), data frameworks foundation comprises of framework applications, information, servers and the system. Gu and Jung (2013) contend that data framework assets are a blend of qualities that comprise the information and aptitude of an association; Internal and outer connections between the specialty units and the ICT segment with outside partners; Technical abilities; And foundation.

Exchange handling frameworks are the fundamental business frameworks utilized at the operational level to oversee and record every day business exchanges (Ladan and Ladan, 2006). They incorporate asset offices and office computerization devices, for example, word preparing, databases, spreadsheets, introduction helps, email, web, and intranets (Clotti, 2003). As indicated by Ladan and Ladan (2006), they join a few unique information components to create reports that administration uses to screen inward activities. The executives Information Systems alludes to data frameworks that give the executives execution. They give directors online reports on the organization's present and authentic presentation (Ladan and Ladan, 2006). They give data to chiefs to perform arranging, control and dynamic errands. They depend on exchange handling frameworks and are utilized to condense exchange preparing results as reports utilized for checking, controlling and assessing tasks and arranging (Cloti, 2003).

Official data frameworks are progressively refined vital administration data frameworks utilized by senior administration to screen the vital course of an association (Clotte, 2003). As per Ladon and Ladon (2006), they are intended to catch data from TPS and MIS and to consolidate information about outside occasions. They channel, pack, and track basic information for ranking directors. As indicated by Klot (2003), choice emotionally supportive networks are particular logical arranging emotionally supportive networks used to improve the quality and results of administrative choices. They encourage the examination and assessment of arrangement improvement and investigation regarding assets, destinations, options, costs,

benefits, dangers, needs, procedures, yields and results. They can be utilized to settle on choices that are explicit, quick changing and not effectively referenced ahead of time (Ladan and Ladan, 2006).

Different frameworks incorporate Customer Relationship Management Systems, Supply Chain Management Systems, Knowledge Management Systems, Finance and Accounting Systems and Human Resources Systems (Cloti, 2003; Ladon and Ladan, 2006). The joining of these frameworks is significant for operational procedures to upgrade and improve the presentation of the association. Klot (2003) features a huge increment in the dependence on electronic administration data frameworks to screen, organize, execute and assess the viability of strategy usage programs. The board data frameworks are the focal point of this investigation.

## III. SUSTAINABILITY PERFORMANCE

Fryker (2001) argues that sustainability is more than just a matter of measuring because it is about environmental integrity, quality of life and transcendence. Rather than asking how we measure sustainability, it is more appropriate to ask how we measure sustainability. Our emphasis on materiality, purpose and rationality, however, only sees external manifestations of stability. Internal expressions of stability, non-material, subjective and empirical, are placed on the one hand because they are cumbersome, interpretive and time-consuming.

Bell and Morse (2010) argue that trying to build and measure sustainability is a futile exercise of measuring unlimited? Sustainability is defined by parameters that are more measurable than other means. While the policy and efforts to measure sustainability do not seem to be working or worse, measurable things end up being measurable and not measurable things because the circular element appears inevitable. Their research results show that "the approach to measurement is always based on a person's sense of stability, which depends on the psychology of measurement."

## IV. ORGANISATIONAL CULTURE

European and American organizations have become worldwide enterprises, extending their activities to different landmasses, prompting proliferation of their administration practices to increase upper hand in different nations through modest work, vicinity to new markets or crude materials. Things. Be that as it may, regardless of whether they attempt to replicate rehearses as intently as could be allowed, the outcomes are seldom good.

For the most part, directors have issues managing transnational repatriation. This is the reason the executives' first originations of culture are like those used to characterize national culture. The improvement of the idea of hierarchical culture has been exceptionally dubious, similar to the case with other hypothetical develops, for example, the authoritative atmosphere, for instance (Valasich and Schneider, 2015).



Thinking about examinations on hierarchical culture, the idea of authoritative culture gets from the essential sociologies - mostly human sciences and humanism, just as brain science - rather than the thought of authoritative atmosphere, which is the result of the exploration led in hierarchical brain research. As a result of the implanted structure in the hypothetical field where they work, the utilization of atmosphere and institutional atmosphere is all the more promptly acknowledged by scholastics.

Hence, since the idea of culture is strange to the hypothesis, its improvement has prompted a lot of discussion among scholastics. Various thoughts of development have been created by powerful creators, for example, Andrew Pettigrew (1979), Linda Smirch (1983) and Edgar Schein (1985). A few issues have validated these discussions: the meaning of the components of making the way of life out of the association and the topic of how powerful the hierarchical culture is, that is, regardless of whether it has an association or is it an association (Smirch, 1983). These are significant issues for this specific examination, as they influence the connections among culture and limit. In Brazil, Freitas (1991) built up Smirch's classifications with an extremely fascinating system.

In another degree of investigation: the exploration of national culture, Geertz Hofstede gave a significant reference point right now. Hofstede (1991) recognizes four free features of culture, which he portrays as: good ways from force, independence and cooperation, manliness and gentility and vulnerability shirking. In ensuing investigations, his group built up a fifth free measurement called Confucian Dynamics, which sees the inverse between the present moment and the long haul pattern and has been utilized to incompletely clarify the achievement of Asian economies in the course of recent decades.

In an association, individuals with various qualities can learn comparable strategies; Organizational culture, as per this creator, is established in the manners in which an individual learns and offers in the working environment. The board strategies ought to be steady with different aspects of individuals' lives in the public arena, circles past the professional workplace (for instance, human asset the board frameworks), and Hofstede further suggests that organizations receive the executives rehearses in their nations of origin in different nations. ). Institutional examinations in Brazil with respect to Brazilian culture have been impacted by crafted by Hofstede and crafted by anthropologists, for example, Roberto DaMatta.

Sparkle expresses that representatives working in a formal and bureaucratic organization can have similar qualities and essential umphs as a casual and on a level plane organized organization. Along these lines, investigations of hierarchical culture ought not be restricted to looking at the ancient rarities found, yet rather collaborations with the individuals from the association to comprehend their actual significance.

Clarifications given by individuals from an association are additionally insufficient, as there are ump radiance that individuals and gatherings don't know about. This ump radiance influences the whole intelligent procedure of association between individuals from the association, without them understanding a great part of the time. These

essential suspicions can't be performed aimlessly. They are bound together social models with some request and adjustment to direct human conduct. In any case, negative and conflicting desires may coincide in a similar association. In this way, understanding the way of life of an association suggests its principal of conversation.

The significance of fundamental ump in bunch elements is in truth the first hypothetical result of crafted by the English specialist W. Bayon (1975). Shane has his own novel translation of the conceptualization of hierarchical culture (Fleury, Shinashiaki, and Stevenatto, 1997), adjusting its ideas to the creating hypothetical model. The way of life of the gathering is an element of the contention between singular wants and the brain research of the gathering. As a result, the way of life of the gathering consistently gives indications of its hidden key ump hala (Bion, 1975). Shane relinquished the possibility of the fundamental standards of conduct and expanded the job of qualities, just as tolerating Beyonc వేరొధమిక్ 's essential ump thought, Klukhon.

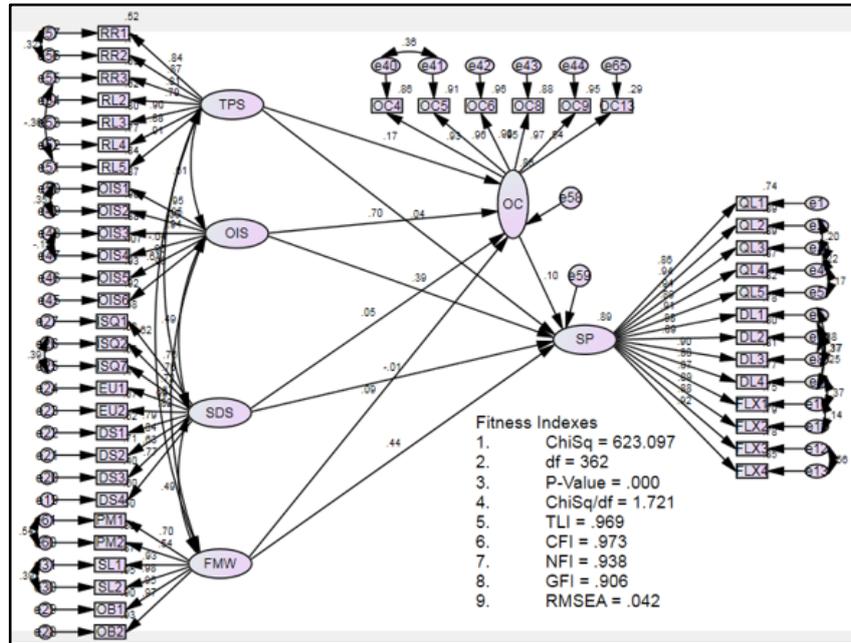
In this way, individuals from the gathering can act as indicated by the standards they believe are generally evident and address (further realities) when they seldom question them or recognize their premise or avocations. Conversation of the various manners by which authoritative culture is examined recommends the need to build up a theoretical recommendation that utilizes the idea of Shane as a beginning stage to infer the political measurement fundamental such marvels. In doing as such, Fleury and Fisher (1989) guarantee that authoritative culture can be thought of as a lot of basic beliefs and ump, communicated in representative components, equipped for passing on importance and building hierarchical personality. What's more, rehearsing power relations.

## V. METHODOLOGY

This study uses quantitative analysis using SPSS and AMOS software to analyze the data. The Social Sciences Statistical Package (SPSS) version 23 is used to analyze basic data and to provide detailed analyzes such as means, standard deviations and frequency. Structural equation modeling (SEM using AMOS 18) using Conformatory Factor Analysis (CFA) was used to test the measurement model. SEM was performed using the recommended two-stage approach (Hair et al., 2011)

## VI. FINDINGS AND ANALYSIS

Analyzing the structural relationship between structures in the research framework using AMOS graphics. Although the initial product of the structural model achieved other fitness indicators, some indicators did not meet acceptable levels. For example, all the observed factor loadings and their associated square multiple regression meet the required thresholds of .50 and .30, respectively. With respect to fit indices, RMSEA and p-value satisfy the criteria for acceptance, while CFI, GFI, and other measures report values below acceptable limits. This suggests that model re-specification is required.



**Figure 1: Final structural model of the research constructs**

The final structural model, as shown in Figure 1, satisfies all the requirements for model acceptance. Standard regression weights, squared multiple regression and all goodness-of-fit indices meet recommended limits. The structural model came after the iterative process of model re-specification. This suggests the causal effect of the mediator (OC) on endogenous structure (SP).

The mediating effect of organizational culture on the relationship between the four exogenous (independent) variables and the endogenous (dependent), bootstrapping method is used. The bootstrapping method has been described as a more effective method of testing mediation than the Sobel test method (Hayes, 2014). The process involves a re-sampling of data between 500 and 1000 times, from which the total impact, direct impact and indirect impact estimates, and their corresponding 95% confidence interval values are generated. The algorithm also estimates the two-tailed significant values for effects along with lower and upper limits.

Given that the finalised structural model of sustainable performance of manufacturing companies in UAE and, role

of information system (IS) on the sustainable performance of manufacturing companies in UAE shows a good fit to the data, inferences are made from the research model, providing empirical support for three research hypotheses as follows:

- 1) There is a positive relationship between Transaction Process System (TPS) and Organisational Culture (OC) ( $\hat{\beta} = .040$ ,  $z = 2.809$ ,  $p = 0.005 < 0.001$ ,  $r^2 = 0.86$ ).
- 2) There is a negative relationship between Operation Information system (OIS) and Organisational Culture ( $\hat{\beta} = -.049$ ,  $z = 14.768$ ,  $p = 0.000 < 0.10$ ,  $r^2 = 0.86$ ).
- 3) There is a positive relationship between Support Decision System (SDS) and Organisational Culture ( $\hat{\beta} = 0.054$ ,  $z = 1.409$ ,  $p = .159 < 0.05$ ,  $r^2 = 0.86$ ).
- 4) There is a positive relationship between Financial Management Workbench (FMW) and Organisational Culture ( $\hat{\beta} = 0.510$ ,  $z = 3.170$ ,  $p = 0.002 < 0.01$ ,  $r^2 = 0.86$ ).

**Table 1: Two-tailed significance of bootstrap confidence interval for indirect effect**

Path relationship	Estimate	Lower Bounds	Upper Bounds	P-value
SP ← OC ← TSP	.017	-.002	.000	.067
SP ← OC ← OIS	.071	.000	.104	.310
BSP ← OC ← SDS	.005	-.022	.050	.413
BSP ← OC ← FMW	.009	-.017	.000	.091

The bootstrapping result for testing the mediation effect of OC (Table 1) shown OC does not mediate on the relationship between TSP and SP ( $\beta = .017$ ; 95% CI:  $-.002 \sim .000$ ;  $p = .067$ ).

Similarly, OC have no mediation effect on the relationship between OIS and SP ( $\beta = .071$ ; 95% CI:  $-.000 \sim .104$ ;  $p = .310$ ). Also OC does not mediate on the relationship between SDS and SP ( $\beta = .005$ ; 95% CI:  $-.022 \sim .050$ ;  $p = .413$ ).

Moreover, the relationship between FMW and SP is not mediated by OC as indicated by the result ( $\beta = .009$ ; 95% CI:  $-.017 \sim .000$ ;  $p = .091$ ). In summary, organizational culture is shown to have no statistically significant mediation effect on the relationship between the four independent variables and the dependent variable in the research. In addition, the overall goodness-of-fit indices of the model provide statistical evidence of the robustness and generalisability of the model.

## VII. CONCLUSIONS

In conclusion, this study has addressed the mediating effect of organisational culture on the relationship between information system and sustainable performance of manufacturing Companies in UAE. This is done by formulating, examining and establishing a research model linking the mediating relationships between Information System, Organisational Culture and Sustainable Performance experienced by the employees.

The research hypotheses were tested in a cross-sectional survey of employees working in organisations in UAE. The results of this study indicate that increased levels of Support Decision System (SDS), lead to lower levels of Organisational Culture (OC).

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