# Dimensional Context of Total Quality Management Practices and Organizational Performance of SMEs in Nigeria: Evidence from Mediating Role of Entrepreneurial Orientation

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*This paper aims to explore the nexus between Total Quality Management practices and Organizational Performance, and the mediating effect of the Entrepreneurial Orientation dimension on the relationship. A cross-sectional data was obtained from 549 small-scale manufacturing companies using convenience sampling. Data were analyzed using both descriptive and inferential techniques. Discovery unveiled through the PLS-SEM result, shows a tie of relationship existing between TQM and performance, as well as entrepreneurial orientation dimension. Since, firms had a high capacity for innovativeness, proactiveness, and risk-taking; they acquire a competitive advantage and realize greater performance.*

**Keywords:** Entrepreneurial Orientation, Organizational Performance, PLS-SEM, TQM

## 1. Introduction

Globally, the significance of quality has been comprehended from diverse organizations, most especially, Small and Medium Enterprises (SMEs), which drive the growth in the economy of both developed and developing nations. Quality implementations necessitate keen anxieties from customers, making organizations bid for quality products and services, to meet desired expectations and exploit worth in their marketplaces (Olaleye *et al.,* 2021a; Demirbag, *et al.,* 2006). Organizations' propensity towards quality is mostly determined by their capability to translate, integrate and confirm quality assurance being unceasing development in enabling steady organizational operations (Asim et al. 2013).

Few among the causative factors recorded on the susceptibility of SMEs' performance amidst developing countries are low entrepreneurial spirit, dearth of

managerial expertise, deprived market orientation, and weak quality management implementation (Olaleye *et al*. 2021a; Budhwar*et al*. 2018; Chakraborty *et al.* 2019). Recently, TQM is regarded as one of the management practices and modern imperative strategic decisions, for organizational survival and competition through the development of a quality product as a tool to attain customer satisfaction (Olaleye, 2019, 2017; Panuwatwanich & Nguyen, 2017; Sinha et al., 2016).

Previous studies depict numerous significant efforts on the nexus between Total Quality Management and performances among advanced countries, while deficiency is noticed among SMEs in emerging nations (Sahoo & Yadav, 2018; Ali *et al*., 2017; Rodrıguez-Gutierrez & Tejada, 2015). Notably, the current study is an attempt to respond to these yearnings, alternatively aiming at counting on related factors as mediators, due to mixed and inconclusive outcomes by extant literature (Carmona-Marquez et al., 2016; Pinho, 2008). Based on the dearth of studies on mediating role of entrepreneurial orientation at a dimensional milieu, this study tends to determine the nexus between TQM and SMEs performance, thereby having entrepreneurial orientation and its dimension as a mediator of the connection within the Nigerian context.

## 2. Literature Review and Hypotheses Development

Entrepreneurial Orientation was initially propounded by Miller (1983), thereafter advanced by Covin & Slevin (1989). Smith and Jambulingam (2018) stated that EO remains a fundamental module of entrepreneurship and strategy. Thus, it characterizes the penchant for organizational decision-making to aid entrepreneurial engagements within firms. Claims were echoed on managerial ideas that appraise organizational exertions on producing innovations targeted at value creation. EO and TQM are managerial practices that had been widely analyzed in the literature, being a pertinent strategy in attaining organizational success (Bello-Pintado *et al.*, 2018; Kumar *et al.*, 2009). Entrepreneurial orientation (EO) makes inference on the level at which prevailing firms become entrepreneurial, and it connotes an utmost significant construct while researching strategic entrepreneurship, even though enormous issues such as dimensionality, measurement model, and construct type are being questioned (Anderson et al., 2015).

During a meta-analysis study conducted by Rauch et al. (2009), the relevance of entrepreneurial orientation is predominantly addressed with validation that a positive connection exists between EO and organizational performance. Furthermore, prevailing organizations mostly experience optimistic performances, when compared with non- EO pursuance.

Extant literature fails to provide generalized definition for TQM or consider effects of TQM practices (Sweis et al., 2016; Jiménez-Jiménez et al., 2015). TQM being a managerial idea can be observed from a philosophical outlook, aims at taming business processes, and practically providing management principles or techniques that can be directly tried. York & Miree (2004) defined TQM as a "set of management methods and tools focused on providing superior value to the customer through identification of customers' expressed and latent needs, responsiveness to changing markets, as well as improving the efficiency of the processes that produce the product or service". Likewise, TQM remains an all-inclusive management idea that continually drives by

targeting firms' overall improved activities, in realizing quality assurance on resource acquisition and pre/post sales offered.

In comparing TQM with performance, literature was unable to give a forthright response suitable on TQM implementation and its effect on firms' performances. Numerous studies affirm the positive impacts of TQM implementation on a firm's performance (Panuwatwanich & Nguyen, 2017; Sweis et al., 2016; Nair, 2003), whereas further studies have shown weak/no significance (Psomas & Jaca, 2016; Kober et al. 2012; Corredor & Goñi, 2011).

Extant studies slightly focused on the indirect effect of entrepreneurial orientation on interrelationship flanked by TQM and performance (Imran et al., 2018; Alsughayir, 2016; Kaynak, 2003). In addition, the prevailing study on the connection between TQM, entrepreneurial orientation, and performance is evolving, as well as the dimensional function of EO in this interaction had not been copiously unraveled.

### 2.1 Total Quality Management, Entrepreneurial Orientation, and Organizational Performance

Underpinning theories on Total Quality Management (TQM) or its philosophy causes progression in literature (Talib *et al.*, 2014; Ebrahimi & Sadeghi, 2013). For instance, Anderson et *al.* (1994) initiated a philosophy on quality management, by appraising the influence of Deming's management method on organizational behavior and quality management implementation. In Nigeria, despite adequate cognizance taken on TQM practices by several TMT members of organizations, its level of implementation remains very low, whereas, successful TQM application tends to aid strategic positioning among firms within Nigeria and internationally (Akinola et al. 2012; Nosakhare 2000).

Total Quality Management meticulously is denoted as machinery to enhance firms' performances. Hence, Organisations that practice TQM derive a competitive advantage over other firms (Hilman et al. 2019). Jimoh*et al.* (2018), in their study, studied the association amidst TQM practices for incessant enhancement on diverse performance measurements among large-and small-scale construction companies in Nigeria. Affirmations were made regarding significant effects of TQM practices, as well as, mediating roles of strategies for incessant development in guaranteeing improved performances, which becomes imperious for organizations longing for competitive advantage due to quality management practices.

Several scholars reported on the nexus between total quality management and performance, having diverse proxies on quality performance, financial indices, operatives' satisfaction, and performance. Meanwhile, periodical discoveries are inconsistent, some studies recognized a positive relationship exists between TQM practices and performance (Hilman*etal.*, 2019; Panuwatwanich & Nguyen, 2017; Valmohammadi & Roshanzamir, 2015), while few specified negative or insignificant relationships (Yang et al. 2009; Corredor & Goni 2011; Kaynak, 2003). Nevertheless, Sadikoglu & Olcay (2014), advanced explanations on mixed results based on measurement of TQM and performance construct, or country-industry bottleneck especially under the context of SMEs. Therefore, the study hypothesized that:

**$H_1$:** TQM has a positive impact on organizational performance

**$H_{2a}$:** TQM is positively associated with competitiveness as a dimension of entrepreneurial orientation

**$H_{2b}$:** TQM is positively associated with innovativeness as a dimension of entrepreneurial orientation
**$H_{2c}$:** TQM is positively associated with proactiveness as a dimension of entrepreneurial orientation
**$H_{2d}$:** TQM is positively associated with risk as a dimension of entrepreneurial orientation

### 2.2 Entrepreneurial Orientation and Organizational Performance

Entrepreneurial Orientation (EO) is extensively described via its dimension; innovativeness, proactiveness, competitiveness, and risk-taking. Meanwhile, innovativeness denotes the willingness and propensity of organizations to realize innovation to strategies, processes, and behaviors (Entebang, Harrison & de Run, 2010). It connotes firms' ability in searching for new opportunities and novel solutions (Olaleye *et al.,* 2021b). Proactiveness concerns hunting for new opportunities which partially relate to prevailing business, as well as, strategically abolishing activities of outdated products and outwitting competitors by offering new products. In addition, proactiveness signifies an organization's willingness and facility to forestall changes earlier, by moving against competitors and reacting to emerging development (Frank, Kessler & Fink, 2010). Competitiveness is a firm's proclivity in contesting intrants to entry or improving a spot in the marketplace, while risk-taking implies "venturing into the unknown, committing a relatively large portion of assets, and borrowing heavily" (Wang & Yen, 2012). Risk-taking remains a cogent dimension of EO often used to describe entrepreneurship (Osman, Rashid, Ahmed, & Hussain, 2011). Risk-taking refers to an organizational predisposition to an action that might result in obscure outcomes encompassing a high menace of failure or implausible successfulness.

Firms are portrayed as having entrepreneurial orientation when they display entrepreneurial traits with adequate consistency in deriving a characterized organizational quality (Covin & Ridges, 2019). Being one of the attributes of organizations, EO penetrates firms' administrative method of insight and decision-making hones, its setup as organizational components, including key behavior.

Prior studies debated on the bond between Entrepreneurial Orientation (EO) and Organizational Performance (OP) resolved that, enterprises having strong EO perform excellently than firms who fail to espouse EO (Shan *et al.,* 2016). Chao & Lee (2018), explored the influence of EO dimensions; risk-taking, innovativeness, and proactiveness on business performance. Hence, it was discovered that innovative proactiveness was solely significant compared with further variables. Similarly, Smith & Jambulingam (2018), empirically studied Entrepreneurial Orientation dimensions, and their impacts on performance, however, it was revealed that EO has a substantial influence on customer orientation, company effectiveness, whereas, innovation, risk-taking, and proactiveness as EO-dimension had sturdier position compared to autonomy and competitive aggressiveness.

Sequel to mixed reactions from previous studies on the significance of EO on OP, thus, EO dimensions were posited to test and stated below;
**$H_{3a}$:** Competitiveness as an EO dimension positively influence organizational performance
**$H_{3b}$:** Innovativeness as an EO dimension positively influence organizational performance.

**$H_{3c}$:** Proactiveness as an EO dimension positively influence organizational performance.
**$H_{3d}$:** Risk-taking, as an EO dimension positively influence organizational performance.

### 2.3 The Mediating Role of Entrepreneurial Orientation

Organization feat relies on performance which connotes the ability to effectively contrivance strategies to attain established objectives (Aribaba et al. 2019; Olaleye, Monday & Afolabi, 2019). Tomal & Jones (2015) and Olaleye (2017), define organizational performance as "the actual result or output of an organization as measured against organizations' intended outputs". Santos *et al.* (2000), emphasized on accurate implementation of TQM practices by offering an impetus in improving overall performance within the construction industry, while the impact of TQM practice on diverse performance measures differs (Kaynak 2003).

Entrepreneurial Orientation remains a vital organizational idea that relieves managerial strategic behavior, enabling organizations to daze competitors as a result of value creation (innovation), and becoming extremely pre-emptive to market opportunities while enduring risk (Jiang *et al.,* 2016). Based on discrepancies of findings, supplementary investigation on modeling association between TQM and SMEs performances is essential, as well as a mediator is necessitated. The study proposes that SMEs' adoption of TQM may expand performance, considering the mediating effect of entrepreneurial orientation, which leads to the following hypothesis:

**$H_4$:** TQM has an indirect effect on organizational performance through the mediation of the entrepreneurial orientation dimension
Based on the aforementioned discussion, the current study tends to examine the influence of EO and TQM on performance within the Nigerian context.

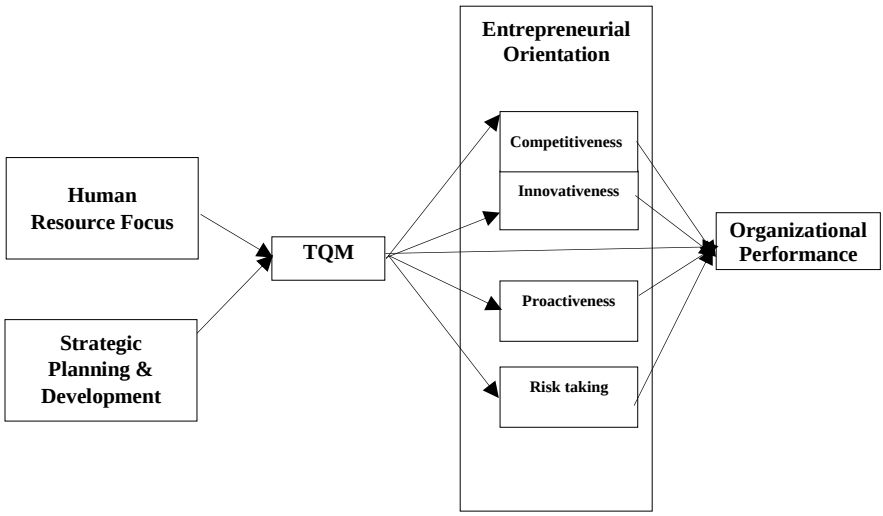


**Figure 1** *Conceptual Model*

# 3. Methodology

## 3.1 Research Design, Population, and Sample Size

Quantitative cross-sectional survey research was employed, with the aid of an adopted survey designed and conveniently administered to gather related information from targeted respondents. The emphasis of this study centers on manufacturing companies listed on the SME business directory (SMEDAN). The National Bureau of Statistics (NBS) report gave 41.5million registered SMEs existing in Nigeria, having the highest SMEs domiciled among three states in the southwest region; Lagos (8,395); Oyo (6,131); Osun (3,007). Using sampling software, the least sample size estimated was 384 manufacturing SMEs out of a population of 41.5million registered firms. Afterward, the sample size determined was doubled, to resolve the non-response problem, while reducing the sampling error (Hair et al. 2010). Finally, out of 768 surveys distributed within the span of 4 months, 549 questionnaires were valid for the study, implying a 71.5 percent response rate.

## 3.2 Measures

A well-structured survey was designed in obtaining responses as adopted from the extant literature. Total quality management (TQM) practices will be operationalized using a dimensional context from diverse previous studies conducted by Rao, (2006); Santos-Vijande, & Álvarez-González's, (2007). Meanwhile, Entrepreneurial Orientation (OE) was measured using four of the five-dimensional construct mentioned by Lumpkin and Dess (1996), Lumpkin et al. (2009), Covin & Slevin's (1989), and George (2011). Finally, organizational performance was measured using seven items (Kaplan & Norton, 1996; Venkatraman & Ramanujam, 1986). Hence, a 5-point Likert scale was adopted to elicit responses.

## 3.3 Data Analysis

The analytical procedure deployed in this study comprises both Descriptive and Inferential statistics. SPSS was utilized in describing the sample population frame, in terms of frequencies and percentages, while the proposed structural model was subjected to strings of tests; psychometric and multi-collinearity, with confirmation by the Partial Least Square Structural Equation Modeling (PLS-SEM) using Smart PLS 3.0 version. Hence, significance level and their path coefficients were examined using the bootstrapping method.

# 4. Results

## 4.1 Socio-economic Profile of the Respondents

Distribution based on demographic features includes; gender, age, educational level attained, and work experiences.

The distribution based on gender illustrates that male respondents account for 72% of the entire response attained, while 28% were female. The majority of the respondents were on above-average proportion, being employees duly engaged for a period more than 5 years, where the least (3.4%) had the experience of below years and nearest to the least was 7.1% accounted for above 20 years of working experience. Finally, responses in place of educational level revealed that above average (53.5%)

possesses bachelors' degree, closely followed by those with masters' degree (27.9%) and the least were those with their Doctorate (5.3%).

**Table 1** *Demographic Profile of the Respondents*

| Variables | Categories | Frequency (n=549) | Percentage |
|---|---|---|---|
| Gender | Male | 394 | 71.8 |
| | Female | 155 | 28.2 |
| Age | Below 30 years | 148 | 26.9 |
| | 30 - 39 years | 131 | 23.9 |
| | 40 - 49 years<br>50 years & above | 253<br>17 | 46.1<br>3.1 |
| Educational Level | Bachelors | 294 | 53.5 |
| | Masters | 153 | 27.9 |
| | Doctorate | 29 | 5.3 |
| | Diploma | 73 | 13.3 |
| Work Experience | Below 5 years | 19 | 3.4 |
| | 5-10 years | 210 | 38.3 |
| | 11-15 years<br>16-20 years | 197<br>84 | 35.9<br>15.3 |

### 4.2 Measurement Model

In assessing the measurement model as hypothesized, all experimented constructs associated with latent variables are subjected to a psychometric test. The test entails the outer loadings, Average Variance Extracted (AVE), Composite Reliability (CR), Cronbach's alpha (CA), rho_ A values, and convergent validity of items related to their constructs (Hair et al. 2017). Meanwhile, all items documented have outer loadings above 0.5, as suggested by Lin & Wang (2012), while values of CR, CA, and rho_ A exceed the 0.7 threshold, which affirms the presence of convergent validity in the measurement model (Dijkstra & Henseler 2015). Since all the AVEs are above the threshold, hence, entire measurement shows an acceptable fit and high predictive power.

Fornell-Larcker's (1981) principle was applied in ascertaining discriminant validity, inter-construct correlation values, and the square root of AVEs for each construct. Meanwhile, the square root of all AVE is displayed in a diagonal in bold format and is said to be greater than the inter-construct correlation of each construct shown in the measurement model. Recently, critiques were made on the reliability of Fornell-Larcker's (1981) criterion, in ascertaining the presence or absence of discriminant

validity (Henseler *et al.*, 2015). Alternatively, the Heterotrait-Monotrait (HTMT) ratio of correlation was recommended, where a Monte-Carlo simulation was conducted to establish the dominance of the HTMT technique over the Fornell-Larcker's (1981) method.

**Table 2** *Measurement Model*

| **Constructs& Indicators** | ***Loadings (λ)*** | **Mean** | **S.D.** | **Skewness** | **Kurtosis** |
|---|---|---|---|---|---|
| **TOTAL QUALITY MANAGEMENT PRACTICES** | | | | | |
| ***Human Resource (People)*** | | | | | |
| HR1 | 0.941*** | 3.144 | 1.355 | -0.135 | -1.194 |
| HR2 | 0.957*** | 3.058 | 1.399 | 0.004 | -1.318 |
| HR3 | 0.928*** | 3.036 | 1.385 | 0.050 | -1.289 |
| HR4 | 0.967*** | 3.062 | 1.379 | -0.003 | -1.276 |
| ***Strategic Planning & Development (Process)*** | | | | | |
| SPD1 | 0.941*** | 3.106 | 1.308 | 0.181 | -1.340 |
| SPD2 | 0.965*** | 3.015 | 1.433 | 0.008 | -1.361 |
| SPD3 | 0.952*** | 3.113 | 1.428 | -0.075 | -1.369 |
| SPD4 | 0.935*** | 2.974 | 1.376 | 0.105 | -1.260 |
| ***Entrepreneurial Orientation (Eo) Dimension*** | | | | | |
| ***Proactiveness*** | | | | | |
| PRO1 | 0.946*** | 3.140 | 1.416 | -0.087 | -1.412 |
| PRO2 | 0.944*** | 3.142 | 1.423 | -0.065 | -1.410 |
| PRO3 | 0.939*** | 3.149 | 1.409 | -0.090 | -1.407 |
| PRO4 | 0.931*** | 3.168 | 1.394 | -0.091 | -1.353 |
| PRO5 | 0.920*** | 3.226 | 1.375 | -1.000 | -1.345 |
| ***Innovativeness*** | | | | | |
| INN1 | 0.959*** | 3.044 | 1.390 | 0.056 | -1.355 |
| INN2 | 0.972*** | 3.046 | 1.427 | 0.082 | -1.446 |
| INN3 | 0.958*** | 3.040 | 1.398 | 0.105 | -1.397 |
| INN4 | 0.921*** | 2.974 | 1.546 | 0.019 | -1.528 |
| INN5 | 0.966*** | 3.046 | 1.426 | 0.063 | -1.445 |
| ***Competitiveness*** | | | | | |
| COMP1 | 0.948*** | 3.040 | 1.235 | -0.162 | -1.234 |
| COMP2 | 0.957*** | 2.953 | 1.369 | -0.017 | -1.293 |
| COMP3 | 0.953*** | 3.047 | 1.361 | -0.009 | -1.288 |
| ***Risk Taking*** | | | | | |
| RISK1 | 0.838*** | 2.925 | 1.467 | 0.008 | -1.423 |
| RISK2 | 0.912*** | 3.084 | 1.296 | -0.176 | -1.110 |
| RISK3 | 0.899*** | 3.015 | 1.331 | -0.017 | -1.222 |
| ***Organizational Performance (OP)*** | | | | | |
| OP1 | 0.963*** | 3.038 | 1.335 | 0.027 | -1.270 |
| OP2 | 0.978*** | 2.987 | 1.346 | 0.077 | -1.329 |
| OP3 | 0.964*** | 3.047 | 1.361 | 0.027 | -1.363 |
| OP4 | 0.959*** | 3.042 | 1.322 | -0.001 | -1.262 |
| OP5 | 0.968*** | 3.022 | 1.355 | 0.035 | -1.351 |

**Note:*** ** = $p< 0.05$; *Outer Loadings* ($\lambda$); *Standard Deviation*- (SD)

Meanwhile, Table 3 depicts the result of the HTMT test in italics, directly above the square roots of AVE in the diagonal. While determining the discriminant validity,

using the Heterotrait-Monotrait (HTMT) ratio, the two-threshold recommended by Kline (2005) and Gold et al. (2001) are ascertained. On average, it was evidenced that HTMT values for all constructs were below thresholds of below 0.90, indicating the presence of incidence of discriminant validity amidst constructs in the model.

**Table 3** *Inter-Construct Correlations, Convergent and Discriminant Validity*

| Constructs | CA | Rho | CR | AVE | COM | INN | OP | PRO | RISK | TQM |
|---|---|---|---|---|---|---|---|---|---|---|
| **Competitiveness** | 0.949 | 0.950 | 0.967 | 0.907 | [a]**0.953** | [b]*0.666* | *0.610* | *0.656* | *0.708* | *0.818* |
| **Innovativeness** | 0.976 | 0.977 | 0.981 | 0.913 | 0.641 | **0.955** | *0.814* | *0.706* | *0.899* | *0.832* |
| **OP** | 0.982 | 0.983 | 0.986 | 0.934 | 0.589 | 0.896 | **0.967** | *0.580* | *0.867* | *0.729* |
| **Proactiveness (PRO)** | 0.965 | 0.966 | 0.973 | 0.876 | 0.628 | 0.685 | 0.565 | **0.936** | *0.685* | *0.754* |
| **Risk Taking (RISK)** | 0.859 | 0.859 | 0.914 | 0.781 | 0.641 | 0.826 | 0.802 | 0.625 | **0.884** | *0.861* |
| **TQM** | 0.948 | 0.949 | 0.957 | 0.735 | 0.871 | 0.801 | 0.704 | 0.722 | 0.867 | **0.857** |

**Notes:** ***CA****=Cronbach's Alpha,* ***CR****=Composite Reliability,* ***rho****= rho_A reliability indices,* ***AVE****= Average Variance Extracted,* [a]*=Diagonal values in bold are the square root of AVE,* [b]*= Italicized values above the square root of AVE are Heterotrait-Monotrait (HTMT) ratios.*

### 4.3 Assessing the Structural Model

In assessing the hypothesized relationship between constructs as depicted in the model in Fig 2, *R*-squared values, the beta ($\beta$) coefficients, and t-values obtained from bootstrapping using 2,000 subsamples and effect sizes ($f^2$) are being examined as recommended by Hair et al. (2019). Firstly, the direct effect of the predictor on the dependent variable is analyzed and the result evidenced that, TQM had a positive effect on OP ($\beta$ = 0.605), the researcher also observed that TQM positively influence entrepreneurial orientation dimensions; competitiveness ($\beta$ = 0.871), innovativeness ($\beta$ = 0.801), proactiveness ($\beta$ = 0.722) and risk-taking ($\beta$ = 0.867). In addition, entrepreneurial orientation dimensions; competitiveness ($\beta$ = 0.321, $p$< 0.05), innovativeness ($\beta$ = 0.817) and risk-taking ($\beta$ = 0.485) had positive, and significant influence on organizational performance, except for proactiveness showing a negative association with organizational performance ($\beta$ = -0.135). Furthermore, hypothesis 4 revealed that competitiveness (COMP), innovativeness (INN) and risk-taking (RISK) positively mediates the TQM- OP path ($\beta$ = 0.280; t = 7.375), ($\beta$ = 0.654; t = 18.931) and ($\beta$ = 0.42; t = 6.927) respectively, while proactiveness inversely mediate relationship between TQM and Organizational Performance ($\beta$ = -0.046; t = 3.273) at $p$ < 0.05. However, all hypothesized paths in the study model are supported and the value of R-squared (0.849) showed the explanatory observed variance in the model.

However, in addition to observing the beta coefficients ($\beta$), statistical significance (*P*-value), and variance explained ($R^2$), Sullivan & Feinn (2012), recommend that the substantive significance ($f^2$) also referred to as the effect size, be reported to reveal the actual magnitude of the observed effects. The effect sizes of the direct and indirect paths are recorded in Table 4 presented below. Relying on the magnitude of effects sizes ($f^2$= 0.02, 0.15, and 0.35), five paths recorded large effect sizes, while two paths (TQM-OP & RISK-OP) recorded medium effects and one path (COMP-OP) had a small effect. Meanwhile, only one path; PRO-OP ($f^2$= 0.012) fell below the threshold and remain of insignificant magnitude.

**Table 4** *Result of the Path Analysis*

| **Hypotheses** | | | | | | |
|---|---|---|---|---|---|---|
| **Direct Effects** | ***βvalues*** | **t-value** | ***P-values*** | ***f²*** | ***R²*** | ***Decision*** |
| **H1:**TQM → OP | 0.605 | 7.952*** | 0.000 | 0.176 | 0.849 | Supported |
| **H2a:**TQM → Competitiveness | 0.871 | 89.021*** | 0.000 | 3.318 | 0.758 | Supported |
| **H2b:** TQM→ Innovativeness | 0.801 | 49.056*** | 0.000 | 1.789 | 0.641 | Supported |
| **H2c:** TQM→ Proactiveness | 0.722 | 31.086*** | 0.000 | 1.089 | 0.521 | Supported |
| **H2d:**TQM → Risk Taking | 0.867 | 89.935*** | 0.000 | 3.024 | 0.751 | Supported |
| **H3a:**Competitiveness → OP | 0.321 | 7.496*** | 0.000 | 0.129 | 0.849 | Supported |
| **H3b:** Innovativeness→ OP | 0.817 | 20.776*** | 0.000 | 1.168 | 0.849 | Supported |
| **H3c:** Proactiveness → OP | -0.063 | 3.338*** | 0.001 | 0.012 | 0.849 | Supported |
| **H3d:**Risk Taking → OP | 0.485 | 6.910*** | 0.000 | 0.250 | 0.849 | Supported |
| **Indirect Effects** | | | | | | |
| **H4a:**TQM→ Competitiveness→ OP | 0.280 | 7.375*** | 0.000 | | | Supported |
| **H4b:**TQM → Innovativeness → OP | 0.654 | 18.931*** | 0.000 | | | Supported |
| **H4c:**TQM → Proactiveness → OP | -0.046 | 3.273*** | 0.001 | | | Supported |
| **H4d:**TQM → Risk Taking →OP | 0.421 | 6.927*** | 0.000 | | | Supported |

***p < 0.05

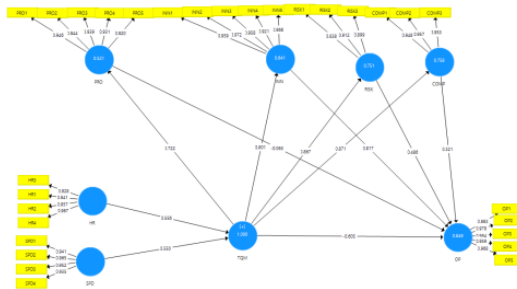

**Figure 1** *Structural Model*

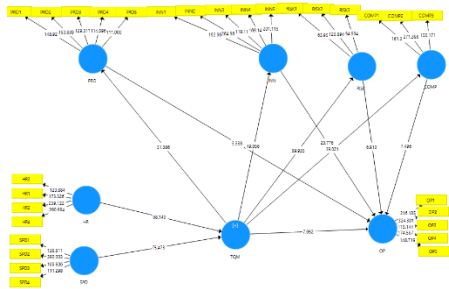

**Figure 3** *T-Test Statistic*

## 5. Discussion and Conclusion

In this study, we explore an imperative managerial philosophy most especially in manufacturing firms not minding its size (small, medium, or large). This study contributes to extant literature considering the model design in a dimensional context. The direct effect was explored among TQM practices and SMEs performance, as well as, mediating role of entrepreneurial orientation and its dimension on their relationship. As SMEs contribute momentously to the development of a nations 'economy, the present findings also revealed the prompt necessity of quality practices on their survival, which vastly have a great effect on their performance and continuing operations. The result of hypothesis 1 revealed that SMEs needed to promote TQM practices; thereby concentrating on people and process control, hence this is affirmed by RBV theory, which resolved on enterprises using their internal valued resources incapacity to exploit gains (Grant, 1991; Barney, 1991). Emphasis was laid on the coherence of results with prior studies as being affirmed by Ali, Hilman & Gorondutse (2020) and Saleh et al. (2018), where TQM positively affects organizational performance.

Following the second hypothesis, TQM practice positively influences the entrepreneurial orientation dimension and this would guide SMEs owners/managers in developing and improving future strategic decisions on the enactment of TQM practices with strong EO, most especially being oriented in proactive issues relating to novel business opportunities. The nexus between the EO dimension and performance remains positively significant, connoting that SME owners/managers are grossly oriented in innovation, risk, and proactive in exploiting opportunities to invigorate organizations and forestall competitive advantage. Hence, owners/managers orientation and strategic capability on entrepreneurship tends to profit the organization in vital areas like performance, competitive aggressiveness, market expansion, and firm survival (Masa'deh et al., 2018; Sahoo & Yadav, 2017; Jogaratnam, 2017)

The significant path between entrepreneurial orientation dimension in mediating the underlying connection between TQM and performance demands entrepreneurial traits and competition-driven by SMEs while pursuing the attainment of TQM practices. Finally, EO supports SME owners/managers to impact their work style, thereby affecting decisions, and indirectly improving firms' performances.

## 6. Theoretical and Managerial Implications

Prevailing research hinge on allied extant literature and model developed to determine the effect of TQM, EO, and performance of SMEs. Investigation of the dual effect of EO and TQM on organizational performances within small and medium-scale manufacturing industries would be an imperative contribution and its discovery tends to offer numerous corporate pathways for managers and policymakers. This study is much more thought-provoking and relevant, following beneath crucial factors. Firstly, outcomes of this research when applied, remain a tool to unravel fiscal subjects associated with the SME sector in Nigeria and thus improve their performances. Likewise, these firms had better support the adoption of TQM practices and their execution via suitable training and policy programs. Secondly, due to its interdisciplinary context, if linked with entrepreneurship and operation management,

results will create countless repute to theorists and researchers in these two disciplines. Furthermore, contributions to the body of knowledge on the TQM–EO and EO–performance relationships by supporting the connection flanked by EO significance, in mediating the TQM–performance relationship. More importantly, it would fill a gap in the literature by validating the research framework evolving on the nexus between TQM, EO, and SMEs' performance.

## 7. Limitations and Suggestions for Future Research

Despite countless contributions and insights in this study, certain confines persist, necessitating attention towards future research. Firstly, a collaboration of other dimensions of TQM apart from the process and people that might give either a positive or negative influence, so also their interactions. Secondly, data collected were sourced from a single informant in each firm investigated. Thirdly, the impending study can equally conduct a longitudinal study to explore the research model and detect changes in the relationship amongst variables. Finally, more contingent determinants such as a moderating role of CEO individual and organizational characteristics can be explored in future research, considering firms' decisions on quality assurance.

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