

## Corporate foresight organizational learning and performance: The moderating role of digital transformation and mediating role of innovativeness in SMEs

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ABSTRACT

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Corporate foresight is a capability that includes any structural or cultural element that enables the company to detect discontinuous change early. The purpose of the present study is to examine the direct impact of corporate foresight, and organizational learning on the performance dynamic of SMEs working in the United Arab Emirates (UAE). In addition, the study tries to analyze the moderating as well as mediating effect of digital transformation and innovativeness on the relationship between exogenous and endogenous constructs. A sample of 576 questionnaires were distributed among the owners/managers of different SMEs working in the region of UAE. However, a final sample of 354 respondents was empirically tested. The data was analyzed through a two-step approach where structural equation modelling (SEM) under SmartPLS was found to be very helpful to examine the direct and indirect relationship between the study variables. The study findings show that there is an insignificant but positive impact of corporate foresight on organizational performance whereas significant impact of organizational learning on organizational performance. Furthermore, the study found evidence for the moderating effect of digital transformation between organizational learning and innovation. Additionally, it is observed that innovativeness mediates the relationship between corporate foresight and performance dynamics. The study findings suggest that for exploring the relationship between corporate foresight, digital transformation, and organization the role of innovation and digital transformation is quite significant. The study findings suggest that both owners and managers at SMEs of UAE should attach more importance to innovative capabilities and digital transformation for achieving higher levels of organizational performance. Policy makers should reasonably consider the direct and indirect effect of study variables while considering high performance at the workplace.

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## 1. Introduction

In the UAE specifically, SMEs have long been recognized as a major contributor to the nation's economy, employment sector and social growth. SMEs provide crucial economic support for Dubai, constructing 95% of all the businesses in the Emirates (Elasrag, 2011). They make up 42% of the labour force and channel approximately 40% to the overall value addition created in the country's economy. The Government of Dubai emphasizes the development of the nation's SMEs to be at par with those in developed and high-income countries. As such, there is a need to formulate SME development initiatives by studying their prevailing condition and developmental needs. In comparison to developed nations, the SMEs' contribution to the GDP is relatively low in developing nations such as Japan (53%), Germany (53%), the United Kingdom (51%), Korea (49%),

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Singapore (49%), Vietnam (45), Thailand (38%), Indonesia (58) and the Philippines (36%). Under the SME Master Plan 2012 – 2020, SMEs have been targeted to contribute 41 percent to the GDP (Manson et al., 2014).

A well-performing organization is one that is known to utilize its resources in the most efficient way possible, and which can align itself with its strategic business objectives (Tukker & Tischner, 2017). It is very important for an organization's managerial and executive staff to understand the importance of the high performing organizations and to create a strategy that can capitalize on various business concepts and initiatives which are helpful in helping the organization achieve positive business growth (Wu, Straub, & Liang, 2015). An organization that is badly managed would typically exhibit low-performance levels. Such an organization would likely have excessively high overhead costs. Without proper strategic foresight and innovation, it is likely for an organization to have redundant products and services. Besides that, a badly planned strategic initiative in an organization would result in high overhead costs due to utilities that are not being maximized. Such an organization is also likely to experience low-profit margins due to bad performance. A badly performing organization is one that is unable to achieve positive sales progress and would typically be unable to maintain and monitor the implementation of their strategic initiatives (Parmenter, 2015). Such an organization is also likely to experience low and sluggish growth. An organization like this would usually be unable to plan and monitor its growth properly and as such, it will be unable to sustain positive and growth (Omar, Leach, & March, 2014).

The competitiveness of a corporation determines its competitive advantage and therefore its existence in the long term. An increasingly dynamic and competitive environment makes it crucially important to achieve competitive advantage. Furthermore, innovations have been identified as an important enabler for competitive advantage by a variety of scholars (Chahal & Bakshi, 2015). It can be achieved through external and internal sources whereupon innovations are addressing both. In order to continuously innovate and stay ahead of the competition, it is necessary to constantly monitor the corporate environment to react to changes (Dereli, 2015). Thereby, the intention behind the monitoring of the company's environment is to identify possible discontinuities early, specifically disruptions or disruptive innovations and empower the company to react before they occur or at least before they turn into a threat for the company. The concept of disruptive innovation was introduced by (Christensen, 2006). He defined disruptive innovations as innovations which are underperforming when they are introduced but which have the potential to outpace existing solutions over time and even define new markets as well as attract new customers (Christensen et al., 2006). Mainly nascent firms or entrepreneurs create and introduce these disruptive innovations. Such entrepreneurs, also called startups, are considered as more innovative regarding radical innovations while organizations perform better with incremental innovation (Teece, Peteraf, & Leih, 2016). Moreover, historical examples show that organizations struggle with disruptive innovations and subsequently lose economic ground or even exit the market. Companies that struggled with the adoption of disruptive innovation are for example Kodak, Nokia or as a more recent example the multinational energy utilities such as EON, RWE, ENBW, and Vattenfall.

Corporate foresight gives insights about the continuously fluctuating business situation and it may affect their distinctive position and cause reduction in their competitive advantage (Kononiuk & Sacio-Szymańska, 2015). It enhances the identification, observation and interpretation of corporate environmental changes and potential opportunities by determining possible implications as well as responses. Innovations as an important source of competitive advantage could be one implication or response (Wan et al., 2015). Scholars have researched the observation, scanning and monitoring of a company's environment, the adaptation to external changes and the concept of disruptive innovation extensively (Johnson, 2019). In the United Arab Emirates, it is observed that several problems are identified as the leading factors contributing to low-performance levels within the organization. Many organizations in this country seem to exhibit low-performance levels because they are lacking in proper corporate foresight. In essence, these organizations seem to lack a set of practices, capabilities, and abilities that allow them to see various changes that can affect the organization adversely. As a result, they are unable to take measures to prevent such adverse consequences or to implement a plan to capitalize on positive opportunities in the industry. Within several organizations in the SMEs of the United Arab Emirates, inefficiencies and problems are quite apparent. These inefficiencies in problems are contributing to a lack of organizational performance in these organizations. An analysis of past studies carried out on the various problems faced by organizations in the United Arab Emirates shows certain trends within organizations in various industries that are quite problematic. One of these is the absence of proper direction in many of these organizations. The fact of the matter is that many organizations in the United Arab Emirates lack proper direction, and this is due to lack foresight of leadership (Warner & Moonesar, 2019). Consequently, they are also likely to engage in poor communications about the organizational strategy with the rest of the organizational members.

## 2. Literature review

Organizational performance can be measured by both financial and non-financial aspects. Financial aspects entail return on investment (ROI), profit, growth (Dewangan & Godse, 2014) and sales return (Chauhan, 2013). However, Bucklin and Sengupta (1993) assert that financial measures with the likes of sales and profit are not good indicators of organizational performance. Bayne et al. (2019) suggested a complementary way of assessing performance i.e. by scrutinizing the effect of non-financial aspects such as workforce size, growth of market share, growth of revenue, revenue per employee, customer satisfaction, market share and revenue generation per employee. Continuous assessments and reviews are needed for these aspects to ensure that the organization remains relevant in a constantly shifting environment with inconsistent resources in terms of cost and availability and in fulfilling stakeholder needs and demands as well as fitting into the internal planning and

target setting (Torraco & Swanson, 1995). In terms of the means for measuring organizational performance, different studies had used different means (Cania, 2014).

Keskin (2006) employed market share, growth rate, and profitability among others to control the different natures of performances in a sample of multi-companies from multi-industries. Meanwhile, Mokhtar (2017) cited that organizational performance measurement has four distinct categories namely financial-related aspects, intellectual capital, physical and non-physical benefits, and a balanced scorecard. Others suggested the use of human performance indicators including employee retention and motivation as well as market performance indicators such as sales, profit margins and customer satisfaction. Eleven business performance measures were proposed by Eklof, Podkorytova, and Malova (2020) namely: new product cycle time, new product success rate, product distinction, market reach of new products and applications, new product introduction rate, customer satisfaction, investment returns, sales growth, market share, market share growth, and profitability. These constructs were employed by Ali et al. (2016) to define organizational performance i.e. the degree to which an organization uses its ability to acquire and use its existing resources to accomplish certain goals. Lin also considered the organizational members' perception of the organization's overall performance based on its efficiency and adaptability. Meanwhile, SME performance was measured by considering the owners/managers' perception of their enterprises' market share, profitability, sales growth, performance returns and general performance. Singh, Darwish, and Potočnik (2016) employed sales growth and profitability in measuring organizational performance. In general, performance is the measure or assessment of an individual, group, company, or organization, which reveals the strengths and weaknesses of the aspect being measured on.

A number of researchers have come to consensus that corporate foresight is a very important factor that plays a significant role in helping an organization to achieve success in their business ventures. It is indicated by researchers that corporate foresight continues to be a factor that is not given special attention to by organizational managers and as such, these organizations continue to experience problems when trying to make the organization more competitive (Wan et al., 2015). Lack of corporate foresight would typically affect the ability of the organization to deal with ever-changing business environments. It also affects the ability to respond adequately to external changes that take place in the business world. Organizations that lack proper corporate foresight typically are very low on innovation and their growth is usually stagnated (Mahmoud, Blankson, Owusu-Frimpong, Nwankwo, & Trang, 2016).

On the other hand, a number of researchers have observed that organizations which attach great importance to corporate foresight are the type of organizations that are better at innovating and are capable of achieving greater organizational growth and progress in the future (Banerjee, 2017). Despite the fact that many researchers have tried to provide a comprehensive framework for corporate foresight, nevertheless, they continue to be a lack of theoretical models that can be used by organizations as a means of achieving superior corporate foresight, which then results in better innovativeness within the organization (Liu & Atuahene-Gima, 2018).

The idea of organizational innovativeness originally referred to the process of adopting opportunities into practice (Bryson, 2018). It allows firms to select the best options that fulfill the needs of their clients supported by a solid foundation that guarantees the firm's survivability. Generally, organizational innovativeness entails the degree to which a firm may adopt and effect innovative changes; however, its definition changes according to the context. Katzenbach and Smith (2008) suggested several forms of innovation including new products or services, new production methods, new markets, new resources, and new organizational forms. Organizational innovation is driven by industrial and business criteria as suggested by Bryson (2018) who views the concept from two standpoints namely 1) novelty i.e. being the first of its kind and 2) novelty i.e. being the first done by a company or industry. Innovativeness is defined by Ghasabeh, Soosay, and Reaiche (2015) as a new idea for a product, process or service that leads to vibrant economic growth, greater employment, and enhanced profitability.

The ability of the organization to engage in learning, unlearning, and relearning is compared to the rejuvenation of the properties which are contained in the fountain of youth. However, these researchers also stated that gaining an understanding of organizational learning is very elusive and several scholars have debated about the way and the content of what people learn within an organizational setting (Bryson, 2018). Although a comprehensive framework for the purposes of organizational learning is quite elusive, nevertheless, scholars agree that it is important to understand the way that organizational learning takes place and what it is that members of the organization are required to learn in order to be able to assist the organization to achieve competitiveness and better innovative abilities. By engaging in organizational learning that can help increase the capacity to learn, organizations are setting themselves up for better overall performance and capabilities. More importantly, such organizational learning would pave the way for better innovation, and thereby enhance competitiveness (Ghasabeh et al., 2015).

There are many scholars that have engaged in debates on organizational learning and discussed extensively the radical underpinnings and made identification of main constructs. From these debates, there are two main questions that have always emerged, and this is what organizational learning is and whether an organization can learn, and whether the learning in the organization is a function of what individuals learn (Katzenbach & Smith, 2015). These questions have spurred a lot of new questions and have resulted in new insights, inquiries, and debates on this matter.

In essence, digital transformation can be described as the strategic implementation and adherence to digital technologies as a means of gaining improvements in terms of enhancing workplace processes and productivity. An increasing number of organizations in these present times are starting to adopt digital technologies in order to increase their competitiveness (Matt, Hess, Benlian, & Engineering, 2015). They see digital technologies as a means of bringing about greater levels of efficiency in workplace processes and enhancing the productivity of their staff. Such digital technologies can also help to manage business risks very effectively and enhance the overall quality and effectiveness of customer services in such organizations (Laudon & Laudon, 2015). On the other hand, businesses which can implement a set of sound business transformation strategies are able to achieve greater enhancements in terms of their productivity, they are capable of controlling expenses and costs, and they are also able to enhance the overall value of the organization.

Based on the above literature, following hypotheses are under consideration

**H<sub>1</sub>:** *Corporate foresight has its significant impact on innovation.*

**H<sub>2</sub>:** *Organizational learning has a significant impact on innovation.*

**H<sub>3</sub>:** *Innovativeness has a significant impact on the performance.*

**H<sub>4</sub>:** *Innovativeness mediates the relationship between the corporate foresight and performance.*

**H<sub>5</sub>:** *Innovativeness mediates the relationship between organizational learning and performance.*

**H<sub>6</sub>:** *Innovativeness mediates the relationship between digital transformation and performance.*

**H<sub>7</sub>:** *Digital transformation moderates the relationship between corporate foresight and innovativeness.*

**H<sub>8</sub>:** *Digital transformation moderates the relationship between organizational learning and innovativeness.*

### **3. Research method**

The focus of current research is to investigate a model based on hypothesis. The hypothesized model assumed a significant effect of digital transformation as a moderator on the linkage among innovativeness and corporate foresight and among innovativeness and organizational learning. For this purpose, six research objectives were developed, and their hypotheses were then investigated. In addition to this, based on the research model, instead of emphasizing more on theory development, this study aims to focus more on testing and validating the hypothesized model. Therefore, a deductive research approach was employed in this research. Moreover, based on the above explained philosophical assumptions, a positive paradigm was employed in current research which is based on the notion of objectivism. The present study adopted a quantitative research approach for assessing the structural relationship among proposed latent variables. Using structural equation modeling and path modeling under SEM-AMOS, 6 hypotheses were tested.

Apart from the benefit of collecting data from a large sample size, the survey method gives an advantage in terms of saving time and cost (Fricker & Schonlau, 2002). The survey method takes less time for the respondents as compared to the interview method. Apart from that, confidentiality is ensured on the respondent's background while quantitative data collection. The survey method allows researchers to collect data, perform statistical analysis, and conduct the reliability and validity tests effectively on the instrument. In explaining the advantages of the survey method, Ebben and Johnson (2005) stated that first, it (survey method) is feasible to large samples. Second, it has the provision of responding to many questions on a given topic and third, it is reliable. Therefore, the present study adopted a quantitative survey method. Because the target population of the present study were middle managers from SMEs, as these managers could best describe the organizational phenomenon in terms of their perception with regards to performance of their respective SMEs. Therefore, the unit of analysis in the present study is organization. To data collection, this study has developed a questionnaire based on the items from existing literature. A final sample of 354 respondents was empirically analyzed to examine the relationship between the study variables.

### **4. Results and discussion**

#### *4.1 Measurement model assessment*

Various researchers have justified through their theoretical and empirical view about the model assessment under primary data analysis. However, for going for such assessment, it is quite important to explain the core concept about model assessment as well. The title of model assessment indicates the way researchers will apply the two-step approach while reporting the results as generated through with the help of PLS. For example, we have explained the usage of two step approach for the reporting of results as generated through Smart PLS where the title of two step justifies the implication of measurement model assessment and structural model assessment, respectively. Initially, the measurement model assessment specifies the examination of individual item reliability, ascertaining the internal item consistency, ascertaining the convergent validity and finally the discriminant validity of the model. After the assessment of measurement model, next step is to analyze the structural model through various findings such as checking the significance of the path coefficients, examining the explained variation of endogenous constructs which is reflected through R<sup>2</sup> of the model, determining the effect size of the model, and predictive relevance or Q<sup>2</sup> as well.

As stated earlier, the current study has utilized the tool facility of Smart PLS for analyzing the relationship between the study variables while following the two-step approach. For this purpose, a range of studies are found while justifying the implication of Smart PLS Ali, Rasoolimanesh, Sarstedt, Ringle, and Ryu (2018). Among various methods, the examining of individual item loadings, Cronbach's alpha, composite reliability and finally the average variance extracted are some of the key core findings which help to understand the assessment of the measurement model in any research. So our study has applied all these methods to analyze the measurement model.

**Table 1**  
Measurement Model Findings

| Variables                         | Items | Loadings | Cronbach's Alpha | Composite Reliability | Average Variance Extracted |
|-----------------------------------|-------|----------|------------------|-----------------------|----------------------------|
| <b>Adaptive Learning</b>          | AL2   | 0.853    | 0.886            | 0.916                 | 0.686                      |
|                                   | AL3   | 0.844    |                  |                       |                            |
|                                   | AL4   | 0.797    |                  |                       |                            |
|                                   | AL5   | 0.816    |                  |                       |                            |
|                                   | CUL1  | 0.823    |                  |                       |                            |
| <b>Culture</b>                    | CUL2  | 0.846    | 0.889            | 0.919                 | 0.693                      |
|                                   | CUL3  | 0.858    |                  |                       |                            |
|                                   | CUL4  | 0.837    |                  |                       |                            |
|                                   | CUL5  | 0.798    |                  |                       |                            |
|                                   | DT1   | 0.868    |                  |                       |                            |
| <b>Digital Transformation</b>     | DT2   | 0.910    | 0.864            | 0.917                 | 0.786                      |
|                                   | DT3   | 0.881    |                  |                       |                            |
|                                   | EL1   | 0.777    |                  |                       |                            |
| <b>Experimental Learning</b>      | EL2   | 0.813    | 0.885            | 0.916                 | 0.687                      |
|                                   | EL3   | 0.890    |                  |                       |                            |
|                                   | EL4   | 0.787    |                  |                       |                            |
|                                   | EL5   | 0.870    |                  |                       |                            |
|                                   | IU2   | 0.778    |                  |                       |                            |
| <b>Information Usage</b>          | IU3   | 0.811    | 0.909            | 0.928                 | 0.649                      |
|                                   | IU4   | 0.847    |                  |                       |                            |
|                                   | IU5   | 0.798    |                  |                       |                            |
|                                   | IU6   | 0.820    |                  |                       |                            |
|                                   | IU7   | 0.833    |                  |                       |                            |
|                                   | MS2   | 0.940    |                  |                       |                            |
|                                   | MS3   | 0.746    |                  |                       |                            |
| MS5                               | 0.906 |          |                  |                       |                            |
| <b>Method Sophistication</b>      | MS2   | 0.940    | 0.856            | 0.905                 | 0.706                      |
|                                   | MS3   | 0.746    |                  |                       |                            |
|                                   | MS5   | 0.906    |                  |                       |                            |
|                                   | OI1   | 0.798    |                  |                       |                            |
|                                   | OI2   | 0.812    |                  |                       |                            |
|                                   | OI3   | 0.838    |                  |                       |                            |
|                                   | OI4   | 0.813    |                  |                       |                            |
|                                   | OI5   | 0.819    |                  |                       |                            |
|                                   | OI6   | 0.791    |                  |                       |                            |
|                                   | OI7   | 0.728    |                  |                       |                            |
| OI8                               | 0.708 |          |                  |                       |                            |
| <b>Organizational Innovative-</b> | OI9   | 0.833    | 0.936            | 0.945                 | 0.634                      |
|                                   | OI10  | 0.811    |                  |                       |                            |
|                                   | OP2   | 0.717    |                  |                       |                            |
|                                   | OP3   | 0.731    |                  |                       |                            |
|                                   | OP4   | 0.792    |                  |                       |                            |
|                                   | OP5   | 0.862    |                  |                       |                            |
|                                   | OP6   | 0.862    |                  |                       |                            |
|                                   | OP7   | 0.803    |                  |                       |                            |
|                                   | OP8   | 0.816    |                  |                       |                            |
|                                   | OP9   | 0.860    |                  |                       |                            |
| <b>Organizational Performance</b> | OP2   | 0.717    | 0.923            | 0.937                 | 0.652                      |
|                                   | OP3   | 0.731    |                  |                       |                            |
|                                   | OP4   | 0.792    |                  |                       |                            |
|                                   | OP5   | 0.862    |                  |                       |                            |
|                                   | OP6   | 0.862    |                  |                       |                            |
|                                   | OP7   | 0.803    |                  |                       |                            |
|                                   | OP8   | 0.816    |                  |                       |                            |
|                                   | OP9   | 0.860    |                  |                       |                            |
|                                   | PN4   | 0.772    |                  |                       |                            |
| PN5                               | 0.865 |          |                  |                       |                            |
| PN6                               | 0.842 |          |                  |                       |                            |
| PN7                               | 0.765 |          |                  |                       |                            |
| <b>People &amp; Network</b>       | PN4   | 0.772    | 0.857            | 0.897                 | 0.637                      |
|                                   | PN5   | 0.865    |                  |                       |                            |
|                                   | PN6   | 0.842    |                  |                       |                            |
|                                   | PN7   | 0.765    |                  |                       |                            |

Under Table 1 the findings are presented where the second column shows the loadings for the individual items of each of the study variables. It is observed that factor loadings for AL1 are 0.833, AL2; 0.855, AL3;0.844, AL4;0.797, and AL5;0.816. Similarly, for Culture items, the relative loadings are observed as CUL1; 0.823, CUL2; 0.846, CUL3; 0.858, CUL4; 0.837, and CUL5; 0.798. For digital transformation, factor loadings were 0.868, 0.910, and 0.881 for all the stated items under Table 4.7. Whereas the factor loadings for the digital transformation is found as DT1; 0.868, DT2; 0.910, and DT3; 0.881. On the other hand, experiential learning factors are providing their factor loadings with the scores of 0.777, 0.813, 0.890, 0.7870. and

870, respectively. In addition, the factor loadings for the factors of method sophistication are found as 0.750 for MS1, 0.940 for MS2, 0.746 for MS5, and 0.906 for MS5, accordingly. For organizational innovativeness, it is observed that factor loadings are .798, 0.812, 0.838, 0.819, 0.791, 0.728, 0.708, 0.833, and 0.811. Besides, the factor of organizational performance has also reflected the factor loading of 0.717 for OP1, 0.731 for OP2, 0.792 for OP4, 0.862 for OP5, 0.862 for OP6, 0.803 for OP7, 0.816 for OP8, and 0.860 for OP9, respectively. All these factors are providing good evidence to claim that there is no issue for the internal loading for each of the items as reflected under Table 1. In addition, Table 1 also presents the value of Cronbach's Alpha (CB) for all the study variables. More specifically, adaptive learning is showing an overall score of 0.886 to cover the title of Cronbach's alpha along with the composite reliability of 0.916. Both scores are reasonable enough to analyze the construct reliability and goodness of measurement model. In addition, the value of Average variance extracted for adaptive learning is also shown under Table 1 which is 0.686. Furthermore, CB value for the culture factor is 0.889, where the score of composite reliability for culture is 0.919 and AVE is 0.693, respectively. This would claim that like adaptive learning there is no problem for the internal reliability of culture construct as well. Additionally, our model also provides the score for digital transformation in terms of CB, composite reliability, and AVE which are 0.864, 0.917, and 0.786. Furthermore, experiential learning indicates the values for CB, Composite reliability, and AVE as 0.885, 0.916, and 0.687. For information usage, our study observed the factor loadings of 0.747, 0.778, 0.811, 0.847, 0.798, 0.820, and 0.833. This would justify the claim that there is no problem in all these factors while representing the factor loadings. Additionally, the value of CB for information usage is 0.909, and for composite reliability and AVE, the relative scores are 0.928, and 0.649. Finally, the scores for analyzing the measurement model of the study also reflects the good fitness for the method sophistication, organizational innovativeness, and organizational performance as well.

After analyzing the factor loadings, and other outcomes under Table 2, the present section provides the details about the discriminant validity of the model which indicates that the study construct has a greatest relationship among their relative indicators as expressed by (Hair et. al., 2017). However, to examine the discriminant validity present literature has provided various measures like reviewing the scores for the Fornell-Larcker, cross loadings and HTMT ratio, respectively. Table 4.8 shows the score for the Fornell and Larcker which is among the core methods to review the discriminant validity. It is observed that diagonal values as provided under Table 4.8 are indicating the square root of correlation between the study constructs. This would justify the argument that there is a reasonable discrimination among the study constructs. Meanwhile the square root as calculated for the AVE is more than the correlations among the latent variables which specifies the fact that discriminant validity of the model is achieved.

**Table 2**  
Discriminant validity (Fornell & Larcker, 1981a)

|     | AL    | CUL   | DT    | EL    | IU    | OI    | MS    | PN    | OP    |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| AL  | 0.828 |       |       |       |       |       |       |       |       |
| CUL | 0.058 | 0.833 |       |       |       |       |       |       |       |
| DT  | 0.313 | 0.003 | 0.887 |       |       |       |       |       |       |
| EL  | 0.011 | 0.033 | 0.142 | 0.829 |       |       |       |       |       |
| IU  | 0.190 | 0.230 | 0.128 | 0.022 | 0.806 |       |       |       |       |
| OI  | 0.214 | 0.304 | 0.366 | 0.152 | 0.393 | 0.796 |       |       |       |
| MS  | 0.089 | 0.075 | 0.421 | 0.148 | 0.216 | 0.283 | 0.840 |       |       |
| PN  | 0.053 | 0.000 | 0.027 | 0.163 | 0.287 | 0.111 | 0.028 | 0.798 |       |
| OP  | 0.229 | 0.063 | 0.577 | 0.134 | 0.192 | 0.452 | 0.512 | 0.041 | 0.808 |

In addition, Table 3 provides the output for the HTM ratio for all the study constructs to reflect the discriminant validity. This approach is provided by (Henseler, Ringle, & Sarstedt, 2015) which explain that if the value between the two latent variables/construct is lower than 0.90 than it is widely claimed that discrimination is observed between both. More specifically, the value of HTM ratio between AL and CUL is 0.083, between CUL and DT is 0.038, between DT and EL is 0.160, between IU and OI is 0.420, between MS and OI is 0.304, between MS and PN is 0.061, and between PN and OP is 0.055, respectively. All these scores have clearly justified the fact that there is no issue for the discriminant validity as measured through HTMT ration of the study. For the better understanding, Fig. 1 provides the graphical layout for the measurement model of the study.

**Table 3**  
Discriminant validity through HTMT of Study Constructs

|     | AL    | CUL   | DT    | EL    | IU    | OI    | MS    | PN    | OP |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|----|
| AL  |       |       |       |       |       |       |       |       |    |
| CUL | 0.083 |       |       |       |       |       |       |       |    |
| DT  | 0.358 | 0.038 |       |       |       |       |       |       |    |
| EL  | 0.044 | 0.058 | 0.160 |       |       |       |       |       |    |
| IU  | 0.209 | 0.253 | 0.141 | 0.058 |       |       |       |       |    |
| OI  | 0.239 | 0.328 | 0.398 | 0.164 | 0.420 |       |       |       |    |
| MS  | 0.131 | 0.088 | 0.492 | 0.173 | 0.242 | 0.304 |       |       |    |
| PN  | 0.068 | 0.084 | 0.063 | 0.185 | 0.321 | 0.119 | 0.061 |       |    |
| OP  | 0.264 | 0.080 | 0.643 | 0.150 | 0.209 | 0.476 | 0.579 | 0.055 |    |

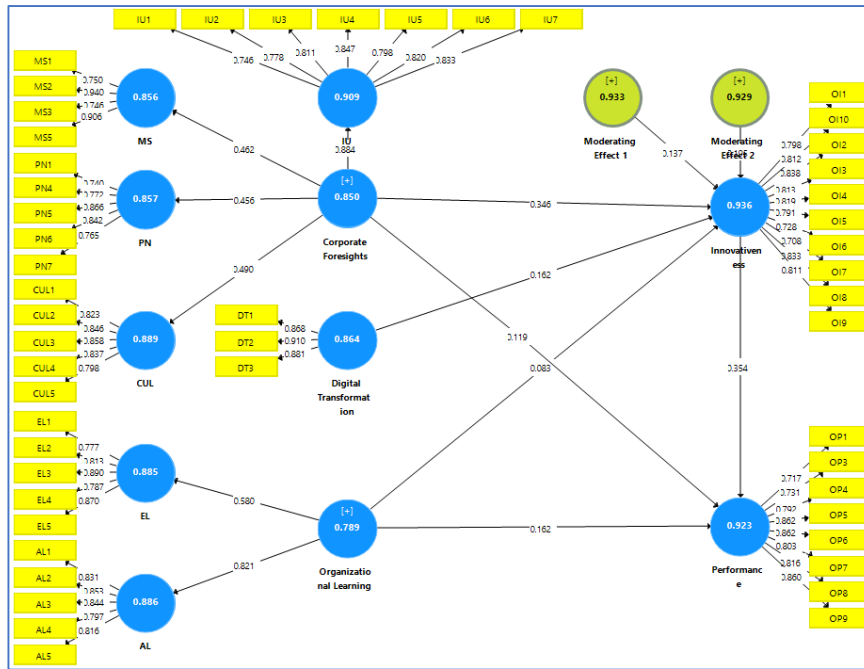


Fig. 1. Measurement Model (PLS Algorithm)

4.2 The results of direct relationship

Present section covers the findings for the direct relationship between the study variables. For this purpose, the PLS-SEM approach is applied, and results are generated accordingly. To analyze the relationship between the study variables, findings are provided under Table 4.12 with the help of beta coefficients, standard deviation of the coefficients, T-statistics, and finally the P-values as well. The first coefficient under Table 4 is 0.346 which indicates a positive impact of corporate foresight on the innovativeness. This would indicate that higher corporate foresight may lead towards higher firm innovativeness under full sample consideration. The value of standard deviation in the relative coefficient is 0.059 which specifies the measure of dispersion. This would indicate that with the unit change in the value of corporate foresight, there is a positive impact on innovativeness under the full sample of the study. Additionally, the coefficient value and the standard deviation has provided a T-statistics of 5.921 which is above the threshold level. Finally, the P-value of first beta coefficient is 0.000 which is less than 0.05 percent level of significance. Therefore, it is claimed that there is a positive and significant impact of corporate foresight on the innovativeness where higher corporate foresight may lead to higher innovation and vice versa.

Table 4 Analyzing the Direct Relationship Between the Study Constructs

| Path                                     | Beta  | STDEV | T Statistics | P Values |
|--|-------|-------|--------------|----------|
| Corporate Foresights → Innovativeness    | 0.346 | 0.059 | 5.921        | 0.000    |
| Corporate Foresights → Performance       | 0.119 | 0.062 | 1.93         | 0.054    |
| Digital Transformation → Innovativeness  | 0.162 | 0.055 | 2.954        | 0.003    |
| Innovativeness → Performance             | 0.354 | 0.055 | 6.404        | 0.000    |
| Organizational Learning → Innovativeness | 0.083 | 0.051 | 1.627        | 0.104    |
| Organizational Learning → Performance    | 0.162 | 0.06  | 2.688        | 0.007    |

The findings under Table 4 also provides the coefficient for the relationship between digital transformation and innovativeness which indicates a positive relationship between both. More specifically, the coefficient of 0.162 would indicate that there is a positive impact of digital transformation on innovativeness where higher digital transformation is leading towards higher innovativeness. This impact of digital transformation is positively significant at 5 percent as p-value is less than 5 percent. It means that there is a positive and significant impact of digital transformation on innovativeness.

Furthermore, the findings under Table 4 also indicates the fact that corporate foresight has its positive impact on the performance. This statement is justified through a beta coefficient of 0.119. However, the value of standard deviation in the beta coefficient is 0.062 which provides a T-score of 1.93. Finally, the p-value is 0.054 which is above the stated level of significance at 5 percent. This would claim that there is a positive but insignificant impact of corporate foresight on the performance dynamics under the selected sample of the study. Additionally, the direct impact of innovativeness on performance is 0.354 which means that higher innovativeness means higher performance and vice versa. The value of standard deviation for this

coefficient is 0.055 and T-score of 6.404. Finally, the p-value of relative coefficient between innovativeness and firm performance is less than 5 percent, hence it is claimed that there is a positive and significant impact of innovativeness on performance.

#### 4.3 The results of mediation

After examining the direct relationship between the study variables, next step is to analyze the mediation impact of innovativeness on the relationship between exogenous and endogenous variables of the study. For this purpose, results are shown under Table 5. It is observed that the mediation impact of innovativeness on the relationship between corporate foresight and performance is positively significant at 5 percent. More specifically, the coefficient of 0.123 justifies that there is a mediating impact of innovativeness between corporate foresights and performance factors where the T-score is 5.849 and P-value is significant at 5 percent. It means that innovativeness mediates the relationship between Corporate foresights-performance. However, the direct impact of corporate foresight on firm performance is found to be positively insignificant but this relationship is observed as significant with the presence of innovativeness as a core mediator of the study. Furthermore, these results also claim that the direct impact of corporate foresights on performance is insignificant, whereas indirect is highly significant at 5 percent.

In addition, the findings under Table 5 also analyzes the mediating effect of innovativeness on the relationship between digital transformation and performance factors of the study. The result shows a beta coefficient of 0.058 and standard deviation of 0.025. Based on both scores, we have achieved a T-score of 2.296 and P-value of 0.022 which is less than a 5 percent chance of error. This would show that there is a positive and significant mediating effect of innovativeness on the relationship between digital transformation and performance dynamics in the SMEs of UAE.

Finally, the results under Table 5 shows the mediating effect of innovativeness between organizational learning and performance dynamics. However, the findings have revealed the fact that there is a positive but insignificant mediating effect of innovativeness on the relationship between organizational learning and performance (i.e. beta=0.029, standard deviation=0.019, T-score=1.571, P-value=0.117). Therefore, it is claimed that the mediating effect of innovativeness only exists between corporate foresight and performance, and between digital transformation and innovativeness.

**Table 5**  
Mediation Results

| Path   | Beta  | STDEV | T Statistics | P Values |
|--|-------|-------|--------------|----------|
| Corporate Foresights → Innovativeness → Performance    | 0.123 | 0.021 | 5.849        | 0.000    |
| Digital Transformation → Innovativeness → Performance  | 0.058 | 0.025 | 2.296        | 0.022    |
| Organizational Learning → Innovativeness → Performance | 0.029 | 0.019 | 1.571        | 0.117    |

#### 4.4 The results of moderation

After investigating the mediating effect, the next step was to analyze the moderating effect of digital transformation on the relationship between corporate foresight and innovativeness and between organizational learning and innovativeness, respectively. For this purpose, results are generated with the help of bootstrapping option under Smartpls and results are shown in Table 6. Initially, an interaction term is generated between corporate foresight and innovativeness, and between organizational learning and innovativeness. The first interaction term or moderating Effect 1 has shown a positive impact on the relationship between corporate foresight and innovativeness where the coefficient is 0.137 and standard deviation of 0.192. However, the value of T-statistics is 0.713 with the p-value of 0.476. This would imply that there is a positive but insignificant moderating effect of digital transformation on the relationship between corporate foresight and innovativeness. Meanwhile, under direct effect, it is observed that there is a positive and significant impact of corporate foresight on innovativeness. Overall, these results would conclude that there is a direct impact of corporate foresight on innovativeness while no indirect effect of digital transformation between corporate foresight and innovativeness is found.

In addition, the findings for the second interaction term (organizational learning\*digital transformation) are also generated through the Bootstrap option in Smart PLS. While discussing the moderating effect, it is quite significant to recall the direct effect of digital transformation on innovativeness as well. It is observed that the direct impact of digital transformation on innovativeness is positive and significant at 5 percent. Additionally, our study results claim that the beta coefficient for the 2<sup>nd</sup> interaction term is also significant and positive (beta=0.192, standard deviation=0.05, T-Statistics=3.868, P-value=0.000). It claims that there is a significant moderating effect of digital transformation on the relationship between organizational learning and innovativeness. Based on these results, our study justifies that both direct and moderating effects are observed on the relationship between organizational learning and innovativeness. For the better understanding, Fig. 2 shows the study findings as generated through bootstrapping options.

**Table 6**  
Moderating Effect Results

| Path                                 | Beta  | STDEV | T Statistics | P Values |
|--------------------------------------|-------|-------|--------------|----------|
| Moderating Effect 1 → Innovativeness | 0.137 | 0.192 | 0.713        | 0.476    |
| Moderating Effect 2 → Innovativeness | 0.195 | 0.05  | 3.868        | 0.000    |



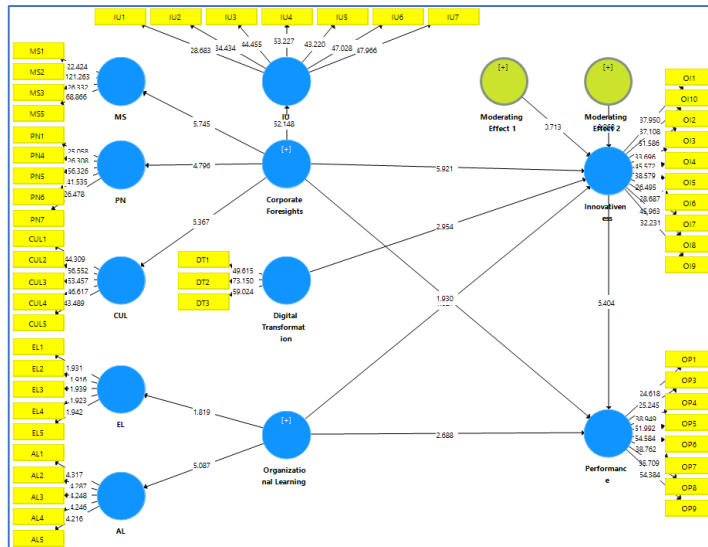


Fig. 2. Structural model (Bootstrapping)

5. Discussion and conclusion

According to the research findings, firms who recognized fundamental changes and disturbances earlier and proactively react accordingly have a greater chance to get more economical gain as compared to others. If the firm learns about the emerging trends, then it will be easier for the firm to take timely actions and respond accordingly towards changes. From this research we get results that the CF supports in creating an outlook, repositioning the innovation portfolio, offers strategic instructions, integrates view, and recognizes the competitor’s new business structure, and offers guidance in the innovation activities. As a competitor, CF gives competition to innovators in creating better innovations, innovations are more successful when they question the assumptions, give competition to the state –of –the-art growth and research about the tasks and look upon the failures which may act as hurdles for the existing innovations and future innovations.

This research has made important contributions and offer managerial implications for studying business foresight, digitalization transformation, influential factors of innovativeness and organizational leaning on the SMEs performance in UAE. The SME’s higher management must ensure the performance of all three CF factors in the firms, by giving special attention towards SMEs performance. A recent research indicates that if the owner managers of SMEs are skilled and trained then they will be able to stimulate the processes and enhance quality. Improvement in quality is linked with better performance of the firm. Skilled managers help in setting and achieving goals of the firms and push for speeding up the processes, which result in increased profit and better performance. The developmental growth of SMEs performance depends upon the entrepreneur’s ability to assign the limited set of resources and adjust themselves accordingly through firm orientation. Achievements can only be possible if workers are motivated and have appropriate skills and precise knowledge. The managerial and practical implications suggest that managers must recognize the importance of organizational learning and organizational performance and become more responsive towards this linkage. During the knowledge creation process, the managers must also ensure spirally and dynamicity by playing a leading role in SMEs management. Knowledge in firms can be expanded through dynamic transformation among explicit and implicit knowledge. Managers must create an environment which enables employees to freely exchange implicit knowledge which thus allows them to generate novel knowledge. Each knowledge transformation requires different ways to generate and distribute knowledge. Communication is considered efficient and dynamic when information is shared between the same or different departments, as multi-tasking skill of employees is very common across different departments. In SMEs, such employees can quickly and efficiently learn, transfer and exchange knowledge in their everyday interactions. Therefore, the power of learning creation based on such multi-tasking skills is quite obvious in UAE SMEs. Another knowledge creation factor in UAE economy is the IT technological growth which has helped firms in achieving rapid growth in organizational performance, in the form of social networking sites, groups, and different forums with related practices. It thus allows one to understand the employees’ potential role and its significance in knowledge creation and informal learning process in context to SMEs in UAE. This research can be assumed as the earliest research to study the combined relationship of digital transformation, corporate foresight, innovativeness, and organizational learning on the performance of organization and performed empirical analysis. This research gives a detailed insight to factors which may affect SMEs performance and studies the connection between these variables.

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