How the Business Intelligence in the New Startup Performance in UAE During COVID-19: The Mediating Role of Innovativeness

M. T. Nuseir, A. Aljumah, and M. T. Alshurideh

Abstract The current study aims at empirically investigating the impact of the business intelligence on the new start-up performance of UAE during Covid-19. The study also examines the mediating role of innovativeness in the relationship between business intelligence and new start-up performance in UAE. The sample size included distributing the questionnaires to 250 respondents to get the required information for further analyses. 210 questionnaires out of 250 were received, so the response rate of the study was 84%. The data analysis involved the path modeling technique because of the explorative nature of the study. The results indicated that all the paths are significant at a *p*-value of less than 0.05. The findings of the study will be helpful for policymakers and researchers in formulating the policy concerning the business intelligence, innovation, and start-up performance in UAE.

Keywords Business intelligence · Innovation · Start-up performance in UAE

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1 Background

No term has been widely accepted by scholars to refer to the external and internal intelligence, which are deemed as essential in business decision-making. The Business Intelligence (BI) is considered an umbrella term that covers processes and technologies required for handling information that may enhance the business decision-making [1]. Therefore, business intelligence is a product as well as a process, which comprises those methods that are used by organizations for intelligence and to generate useful information that may help firms thrive and survive in the marketplace. As a product, it serves as information that enables firms to anticipate the behavior of firms' suppliers, customers, competitors, services, products, business environment. and technologies with greater certainty.

The Business intelligence (BI) has gained considerable attention due to its increased accessibility to the information through electronic means. In this process, information is acquired, processed, and presented in a useful form and also forms the basis for organizations' intelligence practices. In addition, the information usage is required to be improved, particularly in the context of the great social and political change taking place around the globe, the rapid technological change, and the increase in the cut-throat competition [2]. However, the increased uncertainty among firms has given rise to the information processing activities [3, 4], which may otherwise jeopardize the firms' survival in the market. Generally, the startups strive to attain a certain position in the market, which is also essential for them to grow and survive. It is noteworthy that small firms are not exactly a smaller version of large firms since both have different structures, management practices, ran an source availability, the competition level and the environmental response in the market they compete [5]. Thus under a highly dynamic, volatile, and competitive business environment, the information must be gathered by firms for improved decision-making. Although it may seem challenging, particularly for the startup firms who are struggling to survive in the market, this information gathering process facilitates the firms' managers to effectively align with their environment and improve the performance of their organization [6, 7]. In addition, firms can use business intelligence (BI) for information gathering and simultaneously contribute to expanding the available pool of knowledge for the managers. Thus, BI can be deemed as important assets for the organizations [8].

In the current study, BI is approached for its characteristics, whereby it is viewed as a construct which covers several dimensions, such as perceived usefulness, an inter-industry analysis, an intra-industry analysis, and BI formality. On the one hand, the perceived usefulness and BI formality are concerned with the internal structure and information usage, whereas the other two aspects are the external aspects. It provides a basic understanding of how intelligence efforts facilitate the decision-making process. Innovativeness is another key concept which is related to the organizational success. This study also studied knowledge gathering through the network learning. Therefore, in order to stimulate the intangible resource acquisition, it is important to interact with actors who possess non-technical or technical knowledge.

Finally, the estimation of the existing relationship between the performance and these constructs is carried out, since all these processes provide assistance to the managers in effectively aligning with the environment and improve the performance [6, 7]. However, limited studies have reported findings related to the business intelligence in small firms. Therefore, this study aims at extending the Business Intelligence (BI) Theory by analyzing different BI aspects in small organizations. Unlike the traditional technological perspective, a managerial perspective considers business intelligence as an important approach [8].

2 COVID 19 and Businesses in the UAE

Globally, all the businesses have experienced the effects of coronavirus (COVID-19). Therefore, business leaders are trying to safely navigate the several interrelated issues, ranging from customers and employees' safety, and reorienting operations to bracing liquidity and cash and maneuvering support programs by the government.

Similar to other governments, The UAE government has also experienced the severity of the upcoming situation and proactively responded by becoming technologically advanced, highly strategic and organized towards slowly and gradually performing activities, as well as following the WHO's advice and observing the developments at the global level. It is well-known that coronavirus has affected the entire world at the end of 2019 and the beginning of 2020. Some countries adopted a denial approach, whereas some were struggling to understand the situation, and others were confused about how they should react. Prior to the announcement of WHO about coronavirus disease as a global pandemic, the UAE government proactively adopted necessary and important steps to deal with risks arising from the COVID-19. Therefore, individuals and businesses in the UAE were assured and felt safe because of the proactive steps taken by their government. Besides, UAE was the first to prepone their Easter/Spring Holidays that were scheduled at the end of March, and announced closing schools and recommended isolation from March 8, 2020, as a necessary action to avoid the spread of coronavirus (COVID-19).

Initially, the office hours and mall timings were also reduced. Subsequently, event organizers were requested to discontinue planning for any forthcoming events and leave them on hold. Besides, the educational and training institutions were ordered to remain and the order was extended to include the means of transport like [9].

After a week or two, the UAE government issued more strict social distancing regulations for all UAE residents, and a lockdown was imposed during the evening hours to perform disinfecting campaigns, followed by a strict lockdown for 24 h till 18th of April. The police introduced a permit system for the residents to purchase the essential home items, such as medicines and food, as well as those who were fighting at the front line, including healthcare professionals, food delivery services, rubbish collection, etc. However, in spite of the permission, people were supposed to wear gloves and masks when leaving their houses and to ensure the compliance of these regulations, the police established numerous checkpoints.

In addition, the government has been issuing regular updates both in English and Arabic through social media platforms. For those who were not abiding by the government's regulations and violated these rules were charged with hefty fines and faced by the legal consequences, such as expelling from the country.

Thus due to strict communications and measurement, no panic purchasing was witnessed in UAE like other countries. In other words, all the residents followed the instructions and guidance by the government in a calm and civilized manner. Some of the essential items, including face masks, were sold out by the mid of the March, which was somehow expected in that situation. However, the UAE region did not face any food shortage or lack of basic amenities. The government repeatedly assured to the UAE residents that pharmacies and supermarkets would be well-stocked, and they should stay home and be safe and should not be concerned about necessities. In a few weeks, everyone shifted from office-based work to working from home station and started to conduct training, meetings, virtual coffees, online services, as well as conferences.

The majority of firms granted paying leaves to their employees; some negotiated with their employees to accept 50% of their salary. At the same time, some chose to send employees on unpaid leave. Unfortunately, some employees were terminated due to COVID-19's impact on the financial condition of some businesses.

In addition, the UAE government has issued a stimulus package for the businesses to generously support them by reducing the cost of starting a business, i.e., 25–98%. This package was announced to facilitate businesses in production, investment, export, import, innovation, and trade, as these will surely go a long way to mitigate the effects of COVI-19 [7]. Moreover, a consolidated platform was also provided by the government, especially for the UAE-based residents who have residence visas but lost their jobs due to COVID-19. Therefore, they are provided with the opportunity to apply through Virtual Labor Marker Portal and companies are directed to publish available vacancies and they were bound to hire the UAE residence visa holders.

In the UAE, most schools are run by private parties who were directly paid by the parents themselves. However, the global pandemic has sabotaged the ability of many parents to pay for their children's school fees. In this regard, several educational groups and school owners realized this problem. They responded by waving off 20–30% of their final term school fee, while others decided to give relief to only those parents who were being affected directly by the pandemic. The utility companies in UAE also cut down water and electricity prices to relieve the impact of COVID-19 on business owners and home.

Businesses and residents in the UAE have been effectively working to fight this global pandemic. In this domain, several businesses in UAE have volunteered to support the economy, such as producing essential equipment, like face masks, financial funding, workforce support to participate in disinfection campaigns and programs, providing free fuel for the equipment that is used in combating the virus, as well as for vehicles, donation of medical equipment, involving hand sanitizers for the police and healthcare staff, and free meals for the volunteers and workers who have been working across the country as part of the national disinfection program.

Further, all private and public hospitals and hotels were used as quarantine centers and as well as for the treatment of COVID-19 patients.

3 Literature Review

3.1 Business Intelligence (BI)

Interestingly, despite the long history of this concept, a significant increase in business intelligence studies has been witnessed in recent years [3, 10]. Business intelligence incorporates different processes and elements from other fields, such as government administration, military and intelligence-driven cultures to some extent [3]. In the context of military, intelligence refers to information gathering about the battlefield environment and the enemy which they would face. In the past, governing bodies have used the military intelligence to achieve their social, political, and economic objectives. In addition, integrating different concepts in the military is not new; rather, business intelligence is one of these concepts used by the military. Generally, business intelligence is generally viewed as an umbrella term that encompasses various processes, technologies and activities to collect, analyze, store, and spread information to achieve improved business decision-making [1]. Several studies have attempted to define and explain this complicated and broad concept, but they could not reach a consensus of proposing a single accepted definition, thus leading to confusing [4]. However, all these studies have integrated the data and information analysis to transform it into useful and condensed managerial knowledge. This concept has been widely studied in the field of management under different contexts [10]. The term BI was also used by some authors as an environmental scanning process, which emphasizes mainly on how the managers scan the organizational environment; At the same time, other scholars described this term as a competitive analysis or intelligence, which focuses on the behavior, weaknesses, and strengths of their competitors [3, 11] and some others refer to it as technological intelligence driven by the technological dynamics [10, 12]. Besides, the same concept was also used with other labels, such as product intelligence, environmental intelligence, customer and marketing intelligence [12]. The business intelligence practice enables to convert the acquired data into useful knowledge, thus leading to effective decision-making to support strategic, operational and tactical decision making at all levels of an organization and ultimately improve the business performance [11, 12]. It is noteworthy that BI not only affects the process of decision-making but also has its influence on the organizational actors that are involved in the practices, i.e., how knowledge is created, shared and how it is perceived. As a consequence, it can be referred to as a cultural dimension [1, 13].

Described BI, and it is a key to perceived benefits as the improvement in business processes, better decisions, and supporting the strategic business objectives.

3.2 Innovativeness

Innovativeness shows the tendency of a firm to support and engage in experimentation, creative processes and new ideas, which result in the creation of new products, technological processes and services [14]. In the entrepreneurship context, innovativeness is the 'newness' level that firms implement in the market. However, after successfully establishing, the start-ups compete with their market competitors by providing their customers with new benefits or by bringing significant improvements in the existing benefits [15]. Based on reviewing the literature review, it is indicated that an innovative performance is a key driver to stimulate other organizational performance aspects and also encourage implementing the learning dynamics in the organization [16]. In this regard, two perspectives of the firm's innovativeness exist, whereby according to the first perspective, innovativeness can be used as a behavioral construct, which explains the firm's rate of adopting innovative ideas and products.

On the contrary, the second perspective denotes the willingness of a firm to change [17]. The innovative capacity of a firm can efficiently utilize the available resources and bring improvements in its potential value and efficiency. In addition, it also helps in developing new intangible assets within the companies. In their study, [18] identified the innovation ability as a determining factor to succeed and survive in the market.

However, more innovativeness may stimulate the value creation and enable firms to develop new abilities and capabilities to be able to address the customer's needs and achieve a better performance and profitability under rapidly changing, competitive, and increasingly complex environment [17, 19]. Numerous prior studies have also reported the innovation capability as a key firm performance determinant [3, 17]. Firms with the innovative capability of creating new technologies and products are likely to achieve a better and improved economic performance [20].

3.3 Startup Performance

Performance refers to the capability of achieving the firm's objectives. Various perspectives of organizational performance exist, such as periods (short versus long term), criteria (employees versus shareholder, profit versus market share), etc. [21]. The previous studies have proposed three different approaches to measure the performance in an organization, namely, (1) the financial performance, (2) the operational and the financial performance dimensions, and (3) the organizational effectiveness. The first approach is the financial performance, which is an outcome-based performance indicator. However, it is a limited concept to assess the business's performance. The second approach covers the operational and financial performance dimensions by integrating non-financial measures, such as introducing new products, the market

share, the internal process outcomes, and marketing effectiveness. All these operational factors contribute to the firm's financial performance, whereas the third and the broadest approach to conceptualizing performance is the organizational effectiveness. The commonly used measures to determine the overall effectiveness or organizational effectiveness include the perceived overall performance, the achievement of goals, reputation, and the firm's survival.

4 Hypotheses Development

The business's success level can be understood by analyzing the firm's performance. Therefore, each organization aims at analyzing its performance arising from its internal business processes [5]. A few prior studies [1, 22] have successfully established a linkage between the business performance and the business intelligence (BI result or knowledge). However, there is still limited research concerning the performance and business intelligence relationship in new ventures. Therefore, this interrelationship is suggested to be important due to the actions and the consequent changes that are made by firms to act in accordance with the environmental changes and new opportunities [20]. In an attempt to achieve the superior performance, firms face several challenges. They are required to continually renew their capabilities and resources in response to environmental changes and also manage an existing set of competences in terms of recent success [23]. Another challenge mentioned in the entrepreneurship research is to develop an understanding of the startup performance. Based on this discussion, the following hypothesis is hypothesized.

H1 Business intelligence has a significant impact on the startup performance.

Innovativeness refers to what extent a firm embraces and engages in experimentation, creativity, and new ideas resulting in the creation of new processes, products, and services, and is considered a cultural aspect of a firm, which helps it succeed and survive under an uncertain business environment [14, 17]. In their study, [3] view innovation as an activity that can be controlled by the management, whereas [23] view it as a process of engaging in creative processes and experimentation, which may lead to technological processes, new products, and services. Firms' actions can also be driven and contingent on external factors, such as the government's legislation, customer's demand, and competitors' actions [3]. Thus [17] mentioned that the relationship between the organizational learning and innovation is of significant importance, as well as the existing prior knowledge helps develop an understanding of the market conditions, the creation of new products and ideas, and new technology [19]. They further argued that a higher innovation capacity improves the capability of a firm to quickly and effectively respond against the environmental challenges. In another study [24] assert that businesses that possess the ability to exploit and transform knowledge explain their innovation level, such as the ability of businesses to introduce new products and problem-solving methods to respond to the market

demand in a minimum possible time. The literature explains the nature of the relationship between the innovativeness and BI. Hence, business intelligence concerns the use of information for better decision-making is likely to affect a firm's innovative actions. In addition, a better access to information does not necessarily result in increased efficiency and business performance. Rather, how this information is used by the organizations is of prime importance [4]. Thus, it can be hypothesized that the information acquisition and using that information in a better way that can positively affect the innovativeness. Based on this discussion, the following hypothesis is hypothesized.

H2 A positive relationship exists among innovativeness in startups and characteristics of business intelligence (BI).

Therefore, innovativeness is assumed to facilitate in pursuing new opportunities by providing a range of new services or products in the market. The successful achievement of these activities will likely enhance and affect the firm's performance [3]. In addition, firms with a greater innovative capability would be capable to effectively respond and satisfy the customer's needs and develop those desirable capabilities which enable them gain a superior profitability and a better performance. During the past few years, the effects of the innovation aspects on the performance have been gaining more attention among scholars [24]. Therefore, the relationship between the two can be anticipated.

H3 A positive relationship exists between startup performance and innovativeness.
H4 Innovativeness mediates the relationship between business intelligence and start-up performance.

5 Method and Measurements

In this study, based on a survey, we adopted the cross-sectional data and developed a questionnaire to gather the required information in order to meet the objective of the present study [25]. By using a seven-point Likert scale, the questionnaire items were observed. The sample size of the present study was 250 distributed to the targeted respondents to get the required information for further analyses. Only 210 questionnaires out of 250 were received, so the response rate of this study was 84%.

For data analyses, the path modeling technique was required because of the explorative nature of the study. According to the available literature, if the research objective is the extension of an existing theory or validation for the prediction of existing relations among different variables, formally the PLS path modeling is the ideal technique.

Many steps were involved in the data analysis process after the collection of the required data through the survey using the Statistical Package for Social Sciences (SPSS) for screening and encoding the data. With the help of this process, it was ensured that for the PLS analysis, the gathered data is appropriate. In the next step, we have estimated the convergent and discriminant validities, the individual item

consistencies and the internal consistency reliabilities in the measurement model (MM). Based on following the suggestions of [26], we used the smart PLS, whereas in the third step for the evaluation of the structural model (SM), we performed a method of bootstrapping for 315 cases and 5000 resamples [27]. Thus, we specifically determined the significance of path coefficients, level of R-square, effect size and predictive relevance for the assessment of SM.

5.1 Measures and Variables

To establish the content validity, the present study extracted some measures from prior studies that were related to the same topic. For instance, the business intelligence measures were derived from [7] study which includes 16 measuring items and these characteristics were grouped into four main dimensions, namely (I) formality, (ii) perceived usefulness, (iii) intra-industry comprehensiveness, and (iv) inter-industry analysis. The perceived rating for each item was obtained from the respondents based on the BI practices and startup experience. A Seven-point Likert scale was adopted in this study, ranging from 1 to 7, where 1 denotes strongly disagree and 7 denotes strongly agree. The Cronbach alpha coefficient was used to assess the internal consistency of the scale, whereby 0.88 value was obtained for the coefficient.

A 10-item scale was used to measure innovativeness based on [28]. The rationale for choosing this scale is that it considers all innovative activities rather than only the inputs that are involved in innovative processes. The Cronbach alpha value obtained for this scale was 0.83.

Besides the financial indicators, other indicators were also integrated into this study because some authors reported only limited applicability in the context to startup. In view of [29], if we closely observe the developing phase of these firms, it can be noticed that sustained improvements in the competitive performance of these firms cannot be reflected merely by financial figures, and cannot easily obtain and interpret subject to new ventures. In addition, it is a multidimensional scale that explains a firm's achievement in comparison to its competitors. This comparison approach has been used in other studies [20]. In another question, firms were asked to rate their performance in relation to the above mentioned six items on a scale from 1 to 7, where 1 denotes 'much worse than competitors' and 7 denotes 'much better than competitors.' The Cronbach alpha value obtained for this scale was 0.76. The normality test was conducted for the variables. Based on reviewing the literature, the reference values for skewness (SK) and kurtosis (Ku) must be satisfied to achieve normality. In this regard, $|sk| < 7$ and $|ku| < 2$ were used as the required conditions for normality, whereby all the variables followed these conditions. The variance inflation factor (VIF) test was also performed, and all values were found to be less than 5 with tolerance values above 0.2, which are in line with the required condition. Thus it can be concluded that no collinearity problem was found in this study.

6 Results

The analysis starts in PLS-SEM by the estimation of the outer or the measurement model (MM). In this process, we assessed the reliabilities and validities, which include convergent and discriminant validity following the estimation of the inner model to analyze the path relationships [30–32]. For the assessment of the model's validity, the recent arguments regarding the PLS path modeling inappropriateness were also keeping in view, so we followed the suggestions of [27] and implemented a two-step process for reporting the outcomes of PLS-SEM.

The different criteria were included in the assessment of MM which is important to observe the outer model, in which the content validity, the convergent and discriminant validity, and the internal consistency reliability (ICR) were included though it is recommended to divide these indicators into two or more subgroups to catch the possible effect [33] (Fig. 1; Table 1).

In their study, [34] suggested that for the measurement of the individual item reliability, we must explore the outer loadings for each indicator. In contrast, according to [35] the degree at which items of specific scale measures, the same concept is known as ICR. In this regard, Cronbach alpha coefficient and composite reliability (CR) are commonly used estimators for the assessment of ICR [31, 32]. The estimates obtained from the CR coefficient are less biased compared to the estimates of Cronbach alpha. However, the Cronbach alpha does not reflect the individual item contribution and assumes all items influence equally towards their respective construct [36]. The other reason for not selecting the Cronbach alpha is that it does not estimate the scale reliability efficiently.

It is also recommended that the coefficient of CR considers the various item loadings [32]. Therefore, the reliability coefficient can be easily selected. Different ranges of ICR value if it is greater or equal to 0.70 and is satisfactory and can be acceptable. In contrast, there is no reliability if the CR value is less than 0.60 (Table 2).

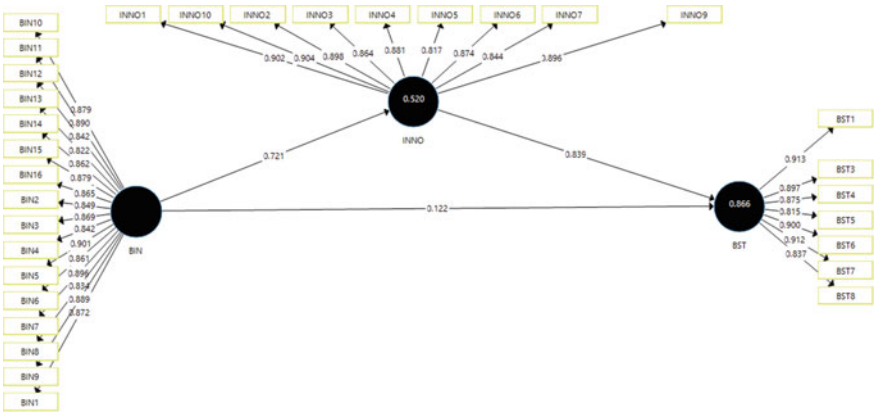

Fig. 1 Measurement model

Table 1 Outer loadings

	BIN	BST	INNO
BIN10	**0.879**	0.635	0.598
BIN11	**0.890**	0.662	0.642
BIN12	**0.842**	0.627	0.638
BIN13	**0.822**	0.630	0.585
BIN14	**0.862**	0.656	0.668
BIN15	**0.879**	0.683	0.686
BIN16	**0.865**	0.629	0.599
BIN2	**0.849**	0.592	0.632
BIN1	**0.872**	0.608	0.608
BIN3	**0.869**	0.594	0.595
BIN4	**0.842**	0.593	0.611
BIN5	**0.901**	0.688	0.679
BIN6	**0.861**	0.604	0.609
BIN7	**0.896**	0.635	0.632
BIN8	**0.834**	0.563	0.543
BIN9	**0.889**	0.650	0.641
BST1	0.694	**0.913**	0.884
BST3	0.631	**0.897**	0.804
BST4	0.639	**0.875**	0.774
BST5	0.573	**0.815**	0.754
BST6	0.636	**0.900**	0.850
BST7	0.668	**0.912**	0.822
BST8	0.623	**0.837**	0.804
INNO1	0.630	0.818	**0.902**
INNO10	0.674	0.844	**0.904**
INNO2	0.636	0.801	**0.898**
INNO3	0.622	0.818	**0.864**
INNO4	0.648	0.796	**0.881**
INNO5	0.579	0.751	**0.817**
INNO6	0.613	0.794	**0.874**
INNO7	0.580	0.792	**0.844**
INNO9	0.693	0.885	**0.896**

Table 2 Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
BIN	**0.978**	**0.978**	**0.980**	**0.750**
BST	**0.951**	**0.952**	**0.960**	**0.773**
INNO	**0.962**	**0.963**	**0.967**	**0.768**

The convergent validity or CV is the extent to which the latent constructs are represented by their specific items and correlate with the other items of a similar construct.

According to [37] view, we can measure the CV via the average variance extracted (AVE). In this way, for all latent contracts of a model, we can compute the AVE. For the enough level of CV for all constructs, the value of AVE should be greater than 0.50, as recommended by [32], While assessing the outer model, the most important criteria are DV. The discriminant validity is the level at which the model particular construct is different from all other latent constructs [34, 35, 37]. Thus for the determination of DV, we compared the correlations among the latent constructs and the square roots of AVE by following the recommendations of [37] (Table 3).

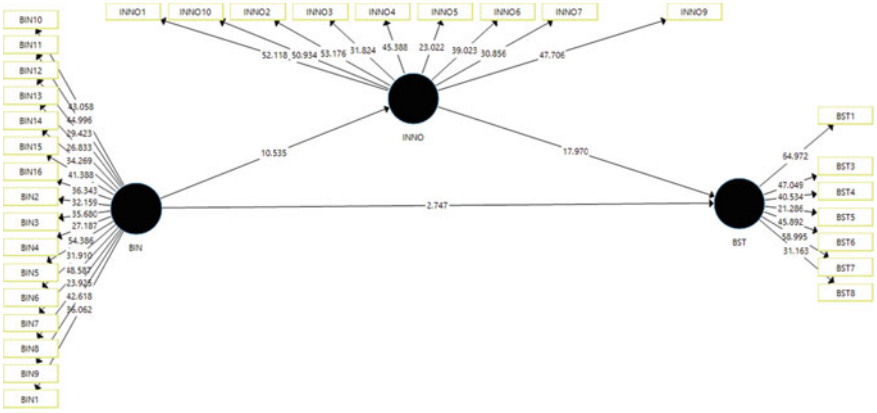

Fig. 2 Structural model

Table 3 Validity

	BIN	BST	INNO
BIN	0.866		
BST	0.727	0.879	
INNO	0.721	0.727	0.876

The results of the structural model are shown in Fig. 2 and Tables 4 and 5. The results indicate that all the paths, namely **BIN → BST, BIN → INNO, and INNO → BST** are significant at *p*-value less than 0.05.

The results of the mediation analysis are shown in Table 5 which shows that the mediation path, namely **BIN → INNO → BST** is significant at *p*-value less than 0.05.

For the assessment of SM, the most important measure is the coefficient of determination, which is also known as the value of R-square. In an endogenous variable, the proportional variance is explained by R-square because of the exogenous variables of the model [35] (Fig. 3).

On the endogenous latent constructs, the effects of latent variables were measured by the effect size via R-square. According to the study of [37], if the values of size

Table 4 Direct relationships

	(O)	(M)	(STDEV)	(|O/STDEV|)	*P* values
BIN -> BST	0.727	0.727	0.064	11.289	**0.000**
BIN -> INNO	0.721	0.722	0.068	10.535	**0.000**
INNO -> BST	0.839	0.832	0.047	17.970	**0.000**

Table 5 Mediation

	(O)	(M)	(STDEV)	(|O/STDEV|)	*P* values
BIN → INNO → BST	0.605	0.599	0.045	13.519	**0.000**

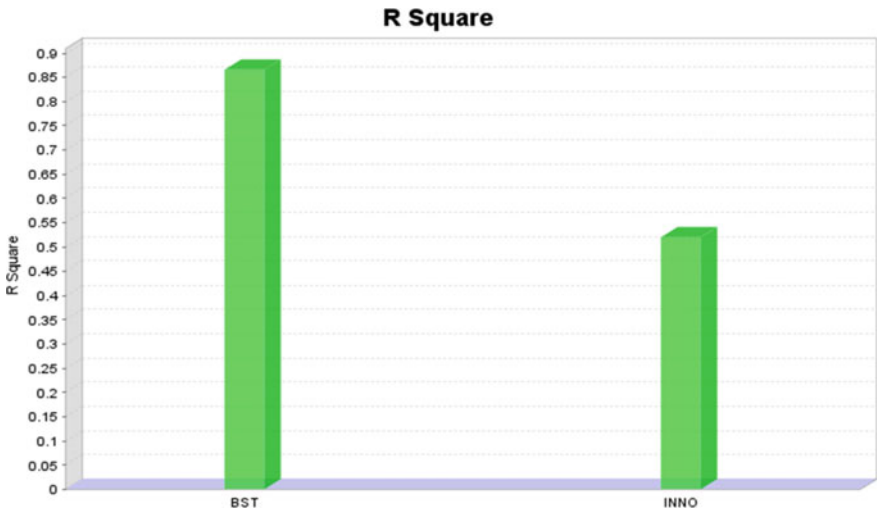

Fig. 3 R-square

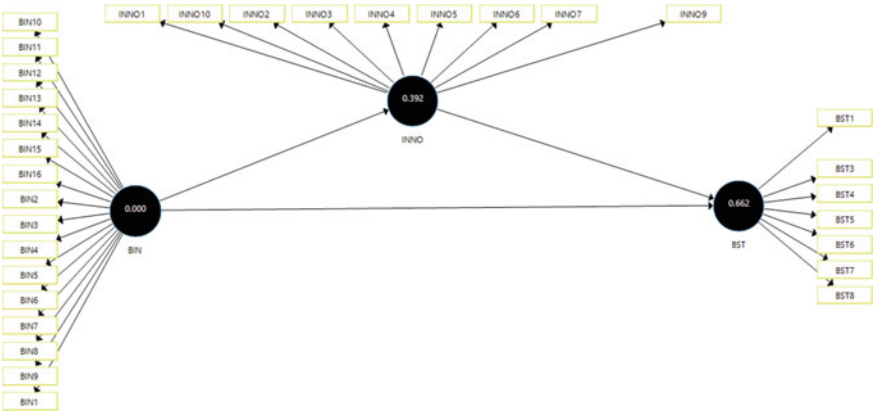

Fig. 4 Q-square

Table 6 Q-square

	SSO	SSE	Q^2 (=1-SSE/SSO)
BIN	3472.000	3472.000	
BST	1519.000	513.961	0.662
INNO	1953.000	1187.991	0.392

are 0.020, 0.150 and 0.350, it explains the little, moderate and significant effect of the independent variables of SM.

In addition, the quantity predictive weight of the manifest variable is known as indicators predictive relevance in a model. Consequently, if the value of Q-square is greater, the model will be more significant (Fig. 4).

The Q^2 values can be compared to make the mandatory variations in the model. If the value of $Q^2 > 0$ that is a threshold level indicates that the model has predictive relevance and recreates well through a blindfolding procedure, the effectiveness of the predictive relevance can be measured by calculating the Q^2 (Table 6).

7 Conclusions

The results of the study are in line with the Resource-Based View (RBV). According to the RBV Theory, organizations must utilize their human, organizational, and physical assets (intangible & tangible) to develop and sustain a competitive advantage. This theory postulates that firms that possess rare and valuable resources are capable of developing a competitive advantage [20], particularly if their resources cannot be easily substituted or imitated. Correspondingly, in terms of knowledge-based view

(KBV), knowledge is viewed as a company's most valuable resource [38]. The RBV theory provides a theoretical foundation for the Knowledge-based view (KBV) by asserting that a firm's primary factor of production is its knowledge, which helps firms in gaining a competitive advantage. This study was based on the sample size of 250 respondents, whereby only 210 questionnaires out of 250 were received, so the response rate of this study was 84%. For the data analysis, the path modeling technique was required because of the explorative nature of the study. The results indicate that all the paths are significant at a *p*-value of less than 0.05.

In this study, BI is approached for its characteristics; it is viewed as a construct which covers several dimensions, such as perceived usefulness, an inter-industry analysis, an intra-industry analysis, and BI formality, where the perceived usefulness and BI formality are concerned with the internal structure and information usage, whereas the other two aspects are the external aspects [39–44]. It provides a basic understanding of how intelligence efforts facilitate the decision-making process. Thus, innovativeness is another key concept, which is related to the organizational success. In addition, this study studied knowledge gathering through the network learning. Therefore, in order to stimulate the intangible resource acquisition, it is important to interact with actors who possess non-technical or technical knowledge. Finally, the estimation of the existing relationship between the performance and these constructs is carried out, since all these processes provide assistance to the managers in effectively aligning with the environment and improve the performance [6, 7, 45]. Since limited studies are reported concerning the business intelligence in small firms, this study aims at extending the Business Intelligence (BI) Theory by analyzing different BI aspects in small organizations. Unlike the traditional technological perspective, a managerial perspective considers business intelligence as an important approach [46–48]. More specifically, the cancellation of conferences, events, training, closed air space, and restricted trading naturally caused a substantial impact on the businesses, particularly the small and medium enterprises (SMEs). The Ministry of Economy in the UAE stated that 98% of the total companies in UAE belongs to the SME sector and accounts for 52% of non-oil GDP.

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