The economic and sustainability priorities in the United Arab Emirates: conflict exploration

Mirjana Pejić Bach, Berislav Žmuk, Tanja Kamenjarska and
Maja Bašić
Faculty of Economics and Business, University of Zagreb, Zagreb, Croatia, and

Bojan Morić Milovanović
Institute of Public Finance, Zagreb, Croatia

Abstract

Purpose – This paper aims to explore and analyse stakeholders' perceptions of the development priorities and suggests more effective strategies to assist sustainable economic growth in the United Arab Emirates (UAE).

Design/methodology/approach – The authors use the World Bank data set, which collects various stakeholders' opinions on the UAE development. First, the exploratory factor analysis has been applied to detect the main groups of development priorities. Second, the fuzzy cluster analysis has been conducted to detect the groups of stakeholders with different attitudes towards the importance of extracted groups of priorities. Third, clusters have been compared according to demographics, media usage and shared prosperity goals.

Findings – The two main groups of development priorities have been extracted by the exploratory factor analysis: economic priorities and sustainability priorities. Four clusters have been detected according to the level of motivation when it comes to the economic and sustainability priorities: Cluster 1 (High economic – High sustainability), Cluster 2 (High economic – Medium sustainability), Cluster 3 (High economic – Low sustainability) and Cluster 4 (Low economic – Low sustainability). Members of the cluster that prefer a high level of economic and sustainability priorities (Cluster 1) also prefer more diversified economic growth providing better employment opportunities and better education and training for young people in the UAE.

Research limitations/implications – Limitations stem from the survey being conducted on a relatively small sample using the data collected by the World Bank; however, this data set allowed a comparison of various stakeholders. Future research should consider a broader sample approach, e.g. exploring and comparing all of the Gulf Cooperation Council (GCC) countries; investigating the opinions of the expatriate managers living in the UAE that are not from GCC countries; and/or including other various groups that are lagging, such as female entrepreneurs.

Practical implications – Several practical implications were identified regarding education and media coverage. Since respondents prioritize the economic development factors over sustainability factors, a media campaign could be developed and executed to increase sustainability awareness. A campaign could target especially male citizens since the analysis indicates that males are more likely to affirm high economic and low sustainability priorities than females. There is no need for further diversification of media campaigns according to age since the analysis did not reveal relevant differences in age groups, implying there is no inter-generational gap between respondents.

Originality/value – This paper contributes to the literature by comparing the perceived importance of various development goals in the UAE, such as development priorities and shared prosperity indicators. The

fuzzy cluster analysis has been used as a novel approach to detect the relevant groups of stakeholders in the UAE and their developmental priorities. The issue of media usage and demographic characteristics in this context has also been discussed.

1. Introduction
Despite numerous attempts to reconcile economic growth with sustainable development, economic growth was notoriously given priority in economic policies, while the environment was looked upon from a separate rather than interconnected perspective (Giddings *et al.*, 2002; Visvizi *et al.*, 2018; Purvis *et al.*, 2019; Shrivastava *et al.*, 2020). The United Nations, as an international head organization, primarily established millennium development goals, which were succeeded by sustainable development goals (SDG) in 2015. However, SDGs often fail to monitor absolute trends in resource usage, prioritizing economic growth over sustainability (Eisenmenger *et al.*, 2020). Eisenmenger *et al.* (2020) go so far as to state that SDGs reinforce a decrease in sustainability since they do not sufficiently address the differences between industrialized and newly industrializing economies.

Attempts have been made to reconcile the two concepts. Mauerhofer's (2008) "3D concept" identifies hierarchies within and conflicts of interest between social, environmental and economic development. According to Mauerhofer (2008), conflicts commonly arise because of misapprehension of embeddings, miscalculation of equity between the dimensions, inadequate statements of boundaries and inadequate institutional support. Hence, balanced economic policies are a prerequisite for sustainable development as they can direct individuals, households and organizations towards sustainable economic development (Holmberg and Snadbrook, 2019; Shrivastava *et al.*, 2020). Niu *et al.* (2019) argue that the solution to the conflict between economic and environmental sustainability in supply chains is integrating various perspectives, such as demand-side and supply-side approaches to sustainability. In this context, stakeholders could have a significant role in attaining the sustainability goals since they can identify potential conflicts early, thus facilitating their implementation (Bahadorestani *et al.*, 2020; Lee *et al.*, 2020).

The Middle East region nations have a distinct advantage in individual wealth and human development (Al-Abbas, 2012). Still, with the current decline of the oil industry and income regression compared to the rapid growth in other Asian countries, these countries had to reconsider their development model, which depended on oil revenues, and diversify income sources. In the Middle East region, natural restrictions and political and societal challenges have hampered efforts to adopt sustainable methods (Issa and Al Abbar, 2015).

The United Arab Emirates (UAE) is a major economic, financial and tourism hub. The oil sector contributes to the performance of other sectors, such as tourism and the financial sector (World Bank, 2021c). After an economic downturn in 2020, the UAE economy improved in 2021, mostly because of a successful vaccination campaign and a reduction in organization of the petroleum exporting countries + oil production cutbacks (World Bank, 2021a). However, the country's vulnerability persists. Although the government efforts have lessened the pandemic's economic consequences, diversification initiatives remain a priority to retain its dynamic comparative advantage. The UAE developed highly ambitious development goals, which are at risk due to the UAE's enormous reliance on natural resources in economic development and growth (Zaidan *et al.*, 2019). Additionally, as a result of insignificant progress in building entrepreneurial policies and bringing entrepreneurial businesses into the national economy (Al-

Sokari *et al.*, 2014), the UAE requires institutional support for entrepreneurial activities (Baporikar, 2015a, 2015b), thereby encouraging sustainable economic growth through various stakeholders, such as private companies and non-governmental organizations (NGOs) (Baporikar, 2015a, 2015b; Hyder and Lussier, 2016; Shrivastava *et al.*, 2020).

A few researchers investigate the need to balance sustainability goals and economic development goals in the UAE. However, most of these studies are oriented towards specific goals. For example, Jayaraman *et al.* (2015a, 2015b) developed a model for optimizing workforce allocation for energy, economic and environmental sustainability in the UAE. AlMallahi *et al.* (2022) designed the multi-criteria decision-making approach for selecting cleaning methods for solar photovoltaic (PV) panels in the UAE based on a sustainability perspective. Other research focuses on various aspects, such as agri-food products (Timpanaro *et al.*, 2022), hospitality (Nadkarni and Haider, 2022) and renewable energy and energy intensity (Dogan and Shah, 2021). Research on the holistic approach to balancing economic and sustainability goals in the UAE is scarce. Jayaraman *et al.* (2015a, 2015b) developed a goal programming model with a satisfaction function for long-run sustainability in the UAE. Jayaraman *et al.* (2017) developed a fuzzy goal programming model to analyse the UAE's energy, environmental and sustainability goals. However, both articles do not include a stakeholder analysis, although stakeholder inclusion is crucial for the success of a sustainability analysis (Bahadorestani *et al.*, 2020; Lee *et al.*, 2020).

Therefore, the research gap is identified in the coherent analysis of the UAE's economic and SDG, which would consider stakeholders' positions. To fill this research gap, we focus on stakeholders' perspectives on the economic and sustainability goals in the UAE. Hence, this study's research questions ask:

RQ1. What conflicts exist between stakeholders' perceptions of development priorities to achieve sustainable economic growth in the United Arab Emirates?

RQ2. What is the relationship between stakeholders' characteristics (age, gender and media usage) and their attitudes towards the economic and sustainability goals?

To answer these questions, this paper uses the World Bank survey on the UAE stakeholders' perceptions about development priorities, which includes various stakeholders' characteristics (age, gender and media usage). A novel methodology has been developed. Firstly, the exploratory factor analysis was conducted to identify major development priority groups. Secondly, a fuzzy cluster analysis was performed to classify groups of stakeholders with conflicting perspectives on the value of the extracted priority categories. Finally, clusters were compared based on demographics, media consumption and shared prosperity aspirations. Based on the cluster comparison, practical implications for future media campaigns aimed at increasing suitability awareness are developed.

The rest of the paper is organized as follows. The subsequent section provides an overview of the relevant literature, which includes theoretical and empirical findings on developing opportunities in the Gulf Cooperation Council (GCC) countries, predominantly the UAE. The third section depicts the study's empirical part, including methodology, sampling, research model, variables and metrics. The fourth section presents and interprets the research results, discusses relevant findings and concludes the paper with policy and managerial implications.

2. Literature review
2.1 Background
Sustainable economic development includes economic, social and environmental welfare policies that, among others, foster social inclusion, job creation, quality of life and resource

stewardship (Roberts and Cohen, 2002; Emerson, 2003; Elkington, 2004; Hammer and Pivo, 2017; Pradhan *et al.*, 2021). Historically, sustainable development went through three phases:

(1) embryonic (before 1972);

(2) moulding (1972–1987); and

(3) developing phase (1987–present) (Shi *et al.*, 2019).

Within the final phase, multilateral developmental agencies changed their perception of economic and sustainability goals from supplemental to complementary (Simon, 1989; Oliveira-Duarte *et al.*, 2021). Bearing this in mind, multilateral agencies now engage various stakeholders, often NGOs (Barbier, 1987; Simon, 1989; Dobele *et al.*, 2015; Sisaye, 2021).

Achieving complementarity between economic development and sustainable development required inclusive growth and new metrics and value indicators (Kostetska *et al.*, 2020). The United Nations' 2030 Agenda for sustainable development comprises 17 SDGs that all member states are obliged to achieve. SDGs aim to end poverty, improve individuals' health, achieve a higher percentage of educated population and reduce the effects of climate change (Hammer and Pivo, 2017). However, SDGs fail to monitor resource consumption patterns, favouring economic expansion above sustainability (Eisenmenger *et al.*, 2020). Eisenmenger *et al.* (2020) say SDGs reduce sustainability since they do not distinguish between industrialized and newly industrializing economies. Therefore, different levels of national institutional capacities, access to natural resources, health care, education and economic development require an individualized national approach (Awan, 2013; Kostetska *et al.*, 2020), whereby an emphasis is placed on effective prioritization and deployment of national capacities (Day and Wensley, 1983; El-Maghrabi *et al.*, 2018).

Kuwait, Oman, Bahrain, Saudi Arabia, Qatar and the UAE, together known as the GCC countries, possess approximately 45% of the world's oil reserves (IvyPanda, 2019), relying heavily on oil and natural gas as export commodities and facilitators of their economic development. As natural resources are depleting (Kalimeris *et al.*, 2014; Baranova and Sorokin, 2017; Tiba and Omri, 2017; Waheed *et al.*, 2019), oil and gas should be swapped for sustainable types of energy around the globe. This makes an economic overreliance on oil and natural gas for GCC countries risky. Moreover, natural resource depletion eventually leads to various structural changes, such as migration (Todaro, 1969, 2011; Okasha, 2020; Fink and Ducoing, 2022). Environmental stress and economic insufficiency increase as economies grow in developing countries. Examples include natural resources (Sun and Wang, 2021), financial development (Sethi *et al.*, 2020), energy consumption and natural resource depletion (Ulucak and Danish, 2020), all of which influence environmental sustainability. The same applies to GCC countries (Sweidan and Alwaked, 2016; Sweidan, 2018).

As (rural-urban) mobility increases, national policies should align with sustainable development policies to create harmonious, sustainable economic development (de Haas, 2010; Aniche, 2020; Prada, 2020; Bil *et al.*, 2021). However, these policies will generate effect only if all stakeholders are included in their implementation (Pinelli and Maiolini, 2017).

2.2 Research propositions development

This paper focuses on the geographic area of the UAE, which like other GCC countries, underwent economic transformations in the 1980s and 1990s, emerging as a relevant international economic force. Favourable oil market circumstances in 2022 reduced fiscal and external imbalances (World Bank, 2022), which still exist due to the weak global recovery, additional coronavirus outbreaks and the oil sector instability (World Bank, 2021a, 2021b, 2021c). Traditionally, the UAE's growth is driven by government spending, supported by ambitious

global campaigns and promotions, such as hosting Expo 2020 (World Bank, 2021b). The government's influence in an undergoing transformation from an oil-based economy towards industries such as tourism and fashion is of uttermost importance (Gharaibeh, 2021; Derbali, 2021; Palekhova, 2021; Papadopoulou, 2022). However, it depends on other stakeholders' support, such as private companies and NGOs. To study potential conflicting interests in the industry transformation of the UAE, the first research proposition (RP) states:

(1) *RP1: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE are conflicted with economic priorities.*

Attitudes towards sustainability differ strongly in various stakeholder demographic groups. Bloodhart and Swim (2020) argue that women tend to support sustainability-driven consumption, and Yamane and Kaneko (2021) indicate that younger consumers are more environmentally conscious than older ones. On the other side, Bloodhart and Swim (2020) found out that the gender of the directors in private company boards is not significantly related to the attitudes towards environmental spending, which raises the issue of the ownership type as probably dominant in terms of attitudes towards sustainability. Therefore, we pose the second *RP* as follows:

(2) *RP2: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE are conflicted regarding demographics.*

- *RP2: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE are conflicted regarding the employment sector.*
- *RP2: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE are conflicted regarding gender.*
- *RP2: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE are conflicted regarding age.*

Cultural intelligence encompasses workplace changes supporting workplace diversity, such as females and minority groups (Thomas *et al.*, 2015). Although institutions empower firms to engage foreign employees and minority groups, the adjustment rate in this direction is still slow in various countries (Nassar and Tvaronavičienė, 2021). The same situation is present in the UAE due to gender stereotypes (Tahir and Raza, 2020; Sandhu *et al.*, 2021), which are also reflected in youth entrepreneurial intentions (Okasha, 2020; Sindakis and Aggarwal, 2022). Students in the UAE are quite hostile towards entrepreneurship due to their fear of failure, and the prestige connected with working in public sector firms (Facchini *et al.*, 2021). On the other hand, entrepreneurship helps economic growth and innovation and increases society's wealth by producing more goods and services and providing additional job possibilities in GCC countries (Debus *et al.*, 2017; Sabella *et al.*, 2014; Facchini *et al.*, 2021). Government assistance is applied to entrepreneurial initiatives through entrepreneurial development projects: the Qatar Science and Technology Park, Saudi Arabia's Knowledge Economic City, Oman's Knowledge Oasis and Dubai's Mohamed bin Rashid Al-Maktoum Foundation (Baporikar, 2015a, 2015b), thereby attempting to create the entrepreneurial climate and to incite different employment opportunities (Al-Sokari *et al.*, 2014). On the other side, most GCC countries' hierarchical governmental structures limit private investment opportunities as the success of state-owned enterprises in the GCC is largely due to government support in the form of large capital surpluses and unique governance mechanisms (Hartog *et al.*, 2010). Herein lie trade-offs between various conflicting goals of transition of natural resource economy towards a knowledge economy equipped to deal with economic sustainability challenges. Hence, *RP3* states:

(3) *RP3: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the United Arab Emirates are conflicted based on shared prosperity goals.*

- *RP3a: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the United Arab Emirates are conflicted based on employment as a shared prosperity goal.*
- *RP3a: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the United Arab Emirates are conflicted based on diversified economic growth as a shared prosperity goal.*

Media usage is related to adopting sustainability practices, such as green product innovation (Salim *et al.*, 2020) and entrepreneurial sustainability intentions (Setyoko and Kurniasih, 2022). Various media sources increase the inclusion of citizens' greater voices and participation to help ensure greater accountability and inclusion of all relevant stakeholders in sustainable economic development. Extensive media coverage and usage must encompass all stakeholders (Reilly and Hynan, 2014). Therefore, we state *RP4* as follows:

(4) *RP4: Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the United Arab Emirates differ based on media usage.*

*RP*s are tested on the data set comprising various stakeholders in the UAE, using the novel methodology based on the fuzzy cluster analysis described in the next chapter.

3. Methodology

3.1 Data

3.1.1 Survey research. This study uses the data on the stakeholder attitudes on various issues, namely, the Country Opinion Survey in the UAE, developed and conducted by the World Bank (2018). The questionnaire aims to provide perceived opinions from national and local governments, multilateral/bilateral agencies, media, academia, the private sector and civil society in the UAE. From February to April 2018, 711 World Bank Group (WBG) stakeholders in four GCC nations (109 in Bahrain, 269 in Kuwait, 173 in Oman and 160 in the UAE) were asked to participate in a Country Opinion Survey on the WBG's activity in their country. The survey included diversified stakeholders from various countries, which could be considered a weakness of the research. Conversely, the World Bank (2018) data set is unique since it encompasses various stakeholder groups of diversified characteristics in terms of gender, age, organization ownership and media usage. In addition, the survey was conducted in 2018, the time before COVID-19 occurred. This could also be considered a weakness of the research. However, as the COVID-19 pandemic is controlled due to the vaccination, the economies are returning to business as usual (Priya *et al.*, 2021), and the survey conducted before the pandemic could be considered relevant since attitudes towards sustainability change slowly and only driven by strong motivational factors (Cheng *et al.*, 2019).

The final data consist of 260 respondents: 119 stakeholders from Kuwait (45.8%), 39 stakeholders from Bahrain (15%), 58 stakeholders from Oman (58%) and 44 respondents from the UAE (16.9%). Although the final data consist of respondents from various countries, the data set could be considered relevant since the respondents are "clients and partners who are either involved in technical assistance in the UAE or who observe activities related to social and economic development" the World Bank (2018, p. 1). Participants came from the Office of Minister, the Parliament, and they also include employees of ministries/ministerial departments/implementation agencies, Project Management Units overseeing World Bank Group activities and consultants/contractors working on WBG-supported activities, as well as staff from bilateral

and multilateral agencies, private sector organizations, private foundations, the financial sector/private banks, NGOs and community-based organizations (World Bank, 2018).

The respondents included in the sample have the following characteristics. Most respondents are male (76%), while about one-quarter of respondents are females (24%). The age distribution is skewed towards the older respondents: 35 and under (16%), 36–45 (27%), 46–55 (42%) and 56 and above (16%). Most respondents are employed in public institutions (56%), while 31% are employed in private institutions and only 12% in NGOs.

3.1.2 Research instrument. The first research instrument used for this study consists of the following four groups of variables:

(1) the measurement of the development priorities;

(2) the shared prosperity indicators;

(3) media usage; and

(4) demographic characteristics.

Table 1 presents the measurements of the development priorities. The respondents were asked to assess the importance of this variable on a Likert scale of 1 to 10 (1 – not important at all and 10 – very important). The measurement was developed by the World Bank (2018).

Code	Variable
a2_1	Social protection (e.g. pensions and targeted social assistance)
a2_2	Gender equity
a2_3	Private sector development
a2_4	Education
a2_5	Public sector governance/reform (i.e. government effectiveness, public financial management, public expenditure and fiscal system reform)
a2_6	Global/regional integration
a2_7	Food security
a2_8	Urban development
a2_9	Energy
a2_10	Water and sanitation
a2_11	Pollution
a2_12	Job creation/employment
a2_13	Health
a2_14	Financial markets
a2_15	Transport (e.g. roads, bridges and transportation)
a2_16	Agriculture
a2_17	Trade and exports
a2_18	Natural resource management (e.g. oil, gas, mining and solar energy)
a2_19	Climate change (e.g. mitigation and adaptation)
a2_20	Anti-corruption
a2_21	Judiciary reform
a2_22	Economic growth
a2_23	Disaster risk management
a2_24	Equality of opportunity (i.e. social inclusion)
a2_25	Non-communicable diseases
a2_26	Information and communications technology

Note: Respondents assess the importance of the development priorities from 1 to 10 (1-not important at all, 10-very important)
Source: World Bank (2018)

Table 1.
Research instrument for the measurement of the development priorities

Since research in the Gulf countries on sustainability is scarce, this research instrument could be considered exploratory. For that purpose, the exploratory factor and the cluster analysis have been conducted. This research instrument was used for investigating the *RP1*.

The demographic characteristics were also considered to compare clusters and identify their significance (Table 2). This research instrument was used for investigating the *RP2*.

The second research instrument presented in Table 3 comprises measures regarding the shared prosperity goals. In this section, the respondents were asked to select no more than two most important shared prosperity goals. This research instrument was used for investigating the *RP3*.

Table 4 presents the variables measuring the perceptions of the importance of the sources of information about economic and development issues in the UAE. The respondents were asked to provide their opinion by selecting no more than two most important sources of information. This research instrument was used for investigating the *RP4*.

3.2 Analysis

The analysis of collected data is conducted in multiple steps. An initial data analysis is conducted first, including descriptive statistics and the factor analysis. In the second step, the clustering of respondents according to the observed variables is conducted by applying a fuzzy clustering approach. In the third step, the characteristics of respondents in the clusters are compared according to criteria such as demographics, media usage and shared prosperity goals.

Variable	Modalities
Sector	Public, private, non-governmental
Gender	Male, female
Age	25 and under; 26–35; 36–45; 46–55; 56 and above

Source: World Bank (2018)

Table 2.
Demographic characteristics

Code	Variable
a3_1	Better employment opportunities for young people
a3_2	Better employment opportunities for women
a3_3	Greater access to micro-finance for the poor
a3_4	Greater voice and participation for citizens to help ensure greater accountability
a3_5	Greater access to health and nutrition for citizens
a3_6	Better entrepreneurial opportunities (e.g. to start small and medium-sized businesses)
a3_7	A growing middle class
a3_8	Better opportunity for the poor expats who live in urban areas
a3_9	More diversified economic growth
a3_10	More reliable social safety net
a3_11	Greater equity of fiscal policy
a3_12	Better quality education and training that ensure better job opportunities
a3_13	Better quality public services
a3_14	Better energy efficiency

Note: Respondents select no more than two most important shared prosperity goals
Source: World Bank (2018)

Table 3.
Research instrument for the shared prosperity goals

The methodology and approach to the analyses are briefly described in the following chapters, whereas the steps in the analysis are graphically presented in Figure 1.

3.2.1 Step 1: initial data analysis. In the initial data analysis stage, basic descriptive statistics methods are applied. Although 260 respondents participated in the survey, not all respondents answered all questions related to measuring the development priorities. Consequently, the number of collected data for each variable is emphasized.

Since the measurement of the development priorities is covered by 26 variables, the factor analysis has been applied to reduce many variables into a smaller number of variables or factors by applying the principal component analysis as an extraction method. Besides, the varimax with Kaiser normalization as a rotation method will be used (Kaiser, 1958). The threshold for factor loadings is set to be at the 0.7 level. In the initial data analysis step, the conducted factor analysis will be used to detect significant variables for further analysis. In that way, the following analysis only includes variables extracted from a certain factor. Variables unrelated to the introduced factors are omitted from further analyses:

Code	Variable
g1_1	International newspapers
g1_2	Local radio
g1_3	International radio
g1_4	Local television
g1_5	International television
g1_6	Local newspapers
g1_7	Internet
g1_8	Social media

Table 4.
Sources of information about economic and social development issues in the UAE

Note: Respondents select no more than two most important sources of information
Source: World Bank (2018)
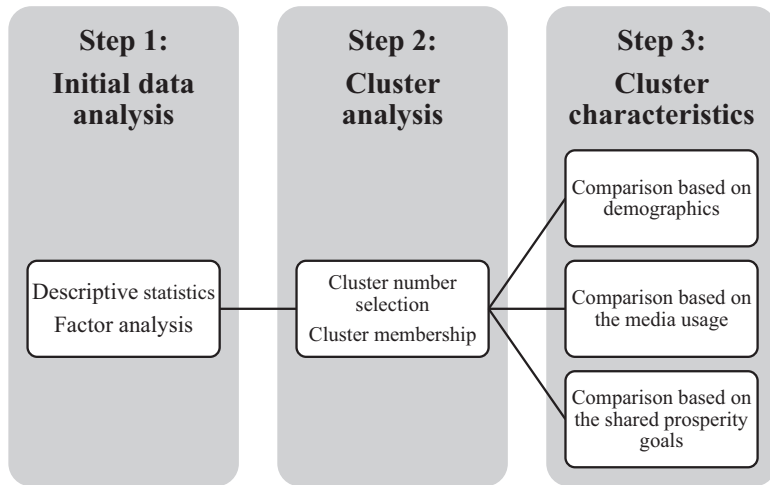
Figure 1.
Analysis process steps

Source: Authors' work

The exploratory cluster analysis was conducted using IBM SPSS ver 28.

Factors extracted in Step 1 are used as the input to the cluster analysis in Step 2.

3.2.2 Step 2: cluster analysis. In the second analysis step, the focus is put on the clustering process, which is conducted on variables related to measuring the development priorities associated with a certain factor in the previously conducted factor analysis. In the analysis, fuzzy clustering or soft clustering is applied. In fuzzy clustering, each data point can belong to more than one cluster. However, according to the clustering algorithm, firstly, the number of clusters should be defined. Afterwards, coefficients are assigned to the data points in the clusters until the given convergence criteria are met.

Jim Bezdek created the Fuzzy C-Means (FCM) cluster analysis in 1973 and updated it in 1981 (Bezdek *et al.*, 1984). Clustering and cluster validity techniques are popular due to their capacity to handle non-statistical uncertainty in high-dimensional data sets. FCM is an iterative feature analysis, grouping and classifier creation technique (Ghosh and Dubey, 2013). The iteration process finishes when the maximum number of iterations is reached or when the goal function improves less than the minimum amount between iterations. The FCM cluster analysis algorithmic stages are as follows (Bezdek *et al.*, 1984; Rao and Vidyavathi, 2010; Suganya and Shanthi, 2012). After setting c to (2 = cn) and choosing m', the partition matrix U(0) is initialized. $r = 0, 1, 2 \ldots t$ denotes each step. Next, calculate each step's c centre vector v i:

$$V_{ij} = \frac{\sum_{k=1}^{n} u_{ik}^{m'} \times x_{kj}}{\sum_{k=1}^{n} u_{ik}^{m'}} \tag{1}$$

In the next phase, the distance matrix $D_{[c,n]}$ is calculated:

$$D_{ij} = \left[\sum_{j=1}^{m} [x_{kj} - v_{ij}]^2 \right]^{[1/2]} \tag{2}$$

The final phase includes the updating of the partition matrix for the rth$^{\circ}$ step, U^{θ} as follows:

$$u_{ik}^{r-1} = 1$$
$$\sum_{j=1}^{c} \left[\frac{d_{ik}^r}{d_{jk}^r} \right]^{2/[m'-1]} \tag{3}$$

If $\|U^{(k+1)} - U^{(k)}\| < \delta$ then STOP; otherwise, return to Step 2 by updating the cluster centres and membership grades for a data point iteratively.

Software JASP is used for developing clusters using the fuzzy cluster analysis. The Elbow method (Marutho *et al.*, 2018) and the Bayesian information criterion (BIC) are used for the selection of the optimal number of clusters (Neath and Cavanaugh, 2012), and the t-SNE cluster plot is used for investigating whether the cluster members are optimally allocated (Van Der Maaten, 2014).

Clusters extracted in Step 2 are used for investigating *RP1*.

3.2.3 Step 3: cluster characteristics. The starting point for the third, final analysis step is the classification of respondents according to the conducted clustering process. Whereas in

the first and the second analysis step, the focus was given to the variables related to the measurement of the development priorities, other sets of variables are included in the third step of the analysis.

The respondents are compared according to their different characteristics by considering their cluster membership using the chi-square test, conducted using IBM SPSS ver 28.

Comparison according to gender, age and sector was used for investigating *RP2*, while comparisons according to shared prosperity goals and media usage were used for investigating *RP3* and *RP4*, respectively.

4. Results

4.1 Step 1: initial data analysis

Table 5 shows the descriptive statistics for the measurement of the development priorities. Respondents assessed the importance of the development priorities from 1 to 10 (1 – not important at all, 10 – very important). The highest importance was assigned to education (average 8.37) and private sector development (average 8.55). On the other hand, non-communicable diseases encompass various chronic diseases (average 6.92), and agriculture (average 6.96) had the lowest grade of importance. The standard deviation does not show significant variations across items, ranging from 2.364 for global/regional integration to 2.845 for anti-corruption.

The factor analysis was also conducted using all variables listed in Table 1. According to the scree plot in Figure 2(a), the optimal number of factors is two, and factor loadings of the observed variables can be easily presented in the two-dimensional space, as provided in [Figure 2(b)]. Factor loadings reveal that the variable a2_2 (Gender equity) does not have a large loading on any of the two introduced factors.

Table 6 provides detailed information about factor loadings of the variables related to the measurement of the development priorities. Out of 26 initially included variables in the factor analysis, 11 variables did not have factor loading above the threshold of 0.7 at any of the two factors. Therefore, those variables have been omitted from further analysis. On the other hand, 11 variables had factor loading above the threshold of 0.7 at the first factor, whereas four variables had factor loading above the threshold of 0.7 at the second factor.

The variables in the first factor are private sector development, education, public sector governance/reform (i.e. government effectiveness, public financial management, public expenditure and fiscal system reform), energy, job creation/employment, health, financial markets, trade and exports, natural resource management (e.g. oil, gas, mining and solar energy) and anti-corruption. The variables in the second factor are agriculture, climate change (e.g. mitigation and adaptation), disaster risk management and non-communicable diseases. Hence, the first factor is called economic factors, and the second is called sustainability factors.

4.2 Step 2: cluster analysis

In the second step, the fuzzy cluster analysis is conducted. It is important to emphasize that the clustering is conducted only on variables related to measuring the development priorities included at Factor 1 or Factor 2 in the previously conducted factor analysis, factors being presented in Figure 3.

According to the elbow graph (Figure 4) and the BIC, the optimal number of clusters is four. T-SNE cluster plot (Figure 5) shows that members of clusters are well grouped, confirming the choice of using the clustering solution with four clusters.

Code	Variable	N	Min	Max	Mean	SD	Coeff. of var.
a2_1	Social protection (e.g. pensions and targeted social assistance)	252	1	10	7.60	2.705	35.59
a2_2	Gender equity	239	1	10	7.45	2.491	33.44
a2_3	Private sector development	248	1	10	8.37	2.431	29.04
a2_4	Education	240	1	10	8.55	2.693	31.50
a2_5	Public sector governance/reform	242	1	10	8.40	2.607	31.04
a2_6	Global/regional integration	238	1	10	7.35	2.364	32.16
a2_7	Food security	243	1	10	7.52	2.731	36.32
a2_8	Urban development	237	1	10	7.43	2.406	32.38
a2_9	Energy	242	1	10	8.03	2.415	30.07
a2_10	Water and sanitation	240	1	10	7.97	2.492	31.27
a2_11	Pollution	235	1	10	7.69	2.561	33.30
a2_12	Job creation/employment	239	1	10	8.18	2.662	32.54
a2_13	Health	239	1	10	8.17	2.584	31.63
a2_14	Financial markets	235	1	10	7.67	2.457	32.03
a2_15	Transport (e.g. roads, bridges and transportation)	241	1	10	7.69	2.385	31.01
a2_16	Agriculture	238	1	10	6.96	2.561	36.80
a2_17	Trade and exports	232	1	10	7.75	2.433	31.39
a2_18	Natural resource management (e.g. oil, gas, mining and solar energy)	239	1	10	8.23	2.511	30.51
a2_19	Climate change (e.g. mitigation and adaptation)	236	1	10	7.28	2.677	36.77
a2_20	Anti-corruption	228	1	10	8.00	2.845	35.56
a2_21	Judiciary reform	218	1	10	7.61	2.751	36.15
a2_22	Economic growth	234	1	10	8.19	2.599	31.73
a2_23	Disaster risk management	228	1	10	7.42	2.465	33.22
a2_24	Equality of opportunity (i.e. social inclusion)	229	1	10	7.62	2.624	34.44
a2_25	Non-communicable diseases	224	1	10	6.92	2.570	37.14
a2_26	Information and communications technology	241	1	10	7.95	2.429	30.55

Source: Authors' work, based on the World Bank (2018)

Table 5.
Descriptive statistics
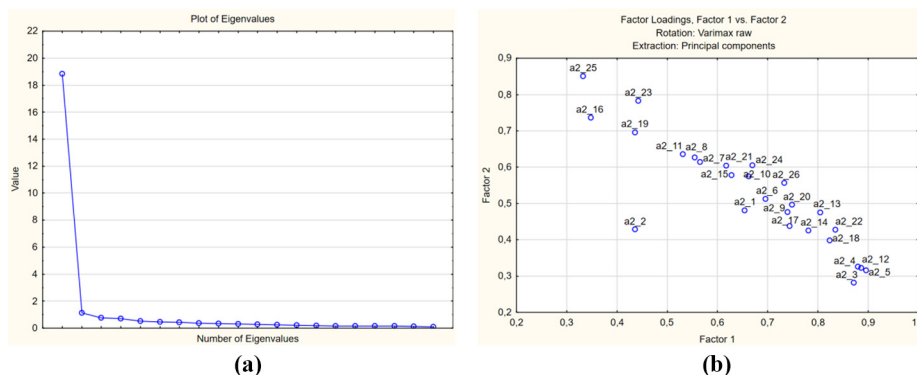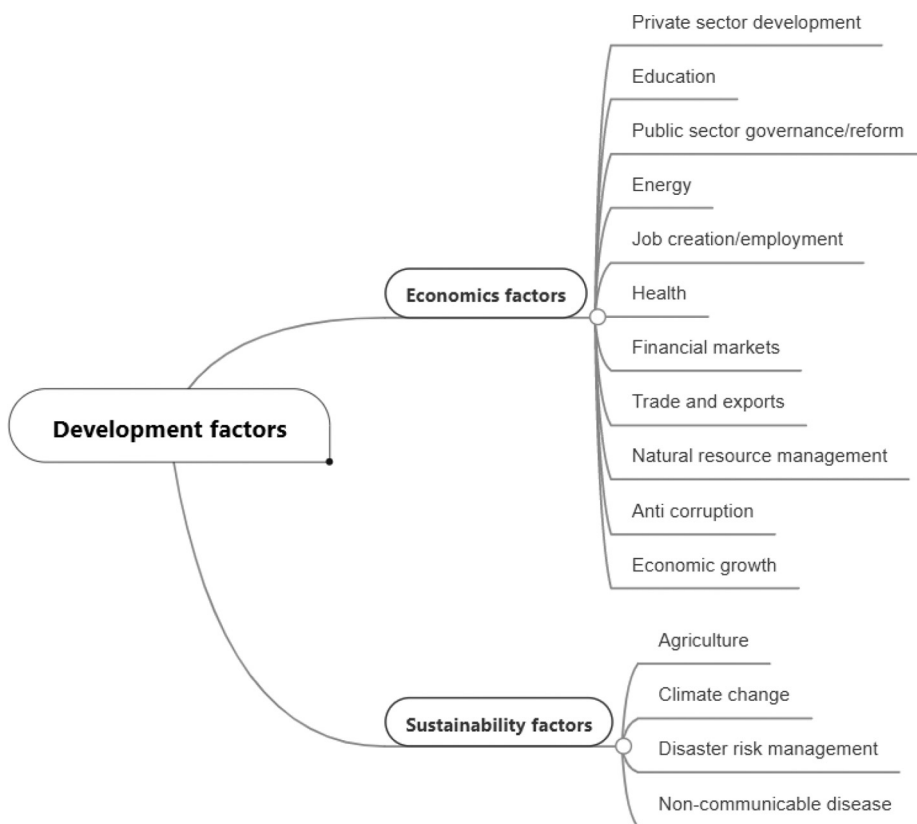
Figure 2.
Factor loadings (a)
and scree plot (b)

Source: Author's work based on the World Bank (2018)

| Code	Variable	Factors	
		Economic	Sustainability
a2_1	Social protection (e.g. pensions and targeted social assistance)	0.625	0.518
a2_2	Gender equity	0.410	0.453
a2_3	*Private sector development*	*0.854*	*0.332*
a2_4	*Education*	*0.859*	*0.377*
a2_5	*Public sector governance/reform (i.e. government effectiveness, public financial management, public expenditure and fiscal system reform)*	*0.876*	*0.368*
a2_6	Global/regional integration	0.664	0.552
a2_7	Food security	0.528	0.647
a2_8	Urban development	0.517	0.658
a2_9	*Energy*	*0.711*	*0.518*
a2_10	Water and sanitation	0.627	0.612
a2_11	Pollution	0.493	0.666
a2_12	*Job creation/employment*	*0.865*	*0.374*
a2_13	*Health*	*0.775*	*0.522*
a2_14	*Financial markets*	*0.755*	*0.470*
a2_15	Transport (e.g. roads, bridges and transportation)	0.593	0.614
a2_16	*Agriculture*	*0.304*	*0.755*
a2_17	*Trade and exports*	*0.717*	*0.480*
a2_18	*Natural resource management (e.g. oil, gas, mining and solar energy)*	*0.798*	*0.446*
a2_19	*Climate change (e.g. mitigation and adaptation)*	*0.395*	*0.720*
a2_20	*Anti-corruption*	*0.718*	*0.540*
a2_21	Judiciary reform	0.581	0.639
a2_22	*Economic growth*	*0.808*	*0.476*
a2_23	*Disaster risk management*	*0.396*	*0.807*
a2_24	Equality of opportunity (i.e. social inclusion)	0.633	0.643
a2_25	*Non-communicable diseases*	*0.282*	*0.868*
a2_26	Information and communications technology	0.699	0.599

Table 6.
Extracted factor
components

Notes: Extraction method: principal component analysis; rotation method: varimax with Kaiser normalization; rotation converged in three iterations; and threshold for loadings: 0.7
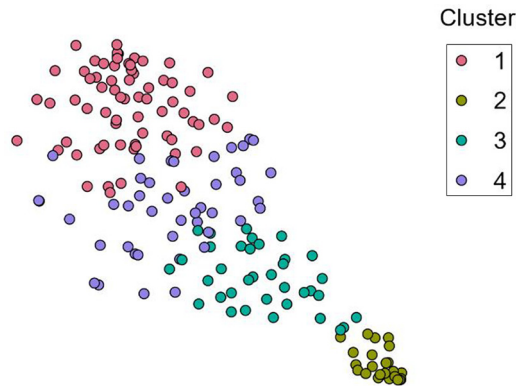**Source:** Authors' work, based on the World Bank (2018)

Note: Figure is created using the tool Mindmeister available at www.mindmeister.com/
Source: Authors' work

Figure 3.
Extracted
development factors
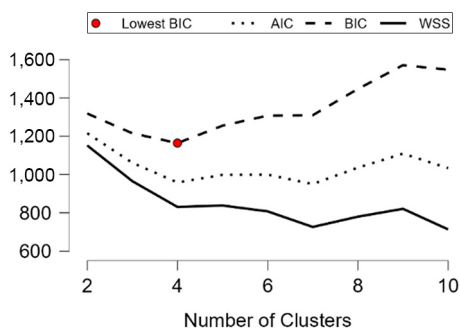
Note: Figure is created using JASP 016.3.0
Source: Authors' work, based on the World
Bank (2018)

Figure 4.
Elbow graph

Figure 5.
T-SNE cluster plot

Note: Figure is created using JASP 016.3.0
Source: Authors' work, based on the World Bank
(2018)

Table 7 presents the ANOVA analysis of the variables used in the cluster analysis, indicating that all of the selected variables are statistically significant at the 1% significance level, implying that the solution of using four clusters is additionally justified.

Cluster means of research variables related to the measurement of the development priorities are shown in Table 8.

According to the results, the first cluster has 32% of respondents. The means across the variables are higher than in other clusters, both for variables related to economic development and sustainable development factors. Because almost all variable means tend to be high (above 9), the first cluster is named Cluster 1: high economic – high sustainability (C1-HE-HS).

The second cluster included 44% of respondents and has rather high means at variables related to economic development factors. However, the means for variables related to sustainability development factors are lower than in the first cluster. Therefore, the second cluster is named Cluster 2: high economic – medium sustainability (C2-HE-MS).

The third cluster included the smallest share of respondents (8%). However, variable means in the third cluster of variables related to economic development factors can still be considered high. On the other hand, the means for variables related to sustainability development factors are considerably lower than in the first and the second cluster. Consequently, the third cluster is called Cluster 3: high economic – low sustainability (C3-HE-LS).

The final, fourth cluster has 16% of respondents. Variable means for economic and sustainable development variables are much lower than the means in the other three clusters. Therefore, the fourth cluster is named Cluster 4: low economic – low sustainability (C4-LE-LS).

4.3 Step 3: cluster characteristics
In the third step, respondents' characteristics are investigated based on respondents' cluster membership. In that way, respondents are observed according to their characteristics related to demographics, media usage and shared prosperity goals.

Code	Variable	Between the sum of squares	df	Within the sum of squares	df	*F*-value	*p*-value
Economic development factors							
a2_3	Private sector development	860.562	3	431.372	179	119.032	0.000***
a2_4	Education	1,240.482	3	286.971	179	257.919	0.000***
a2_5	Public sector governance/reform	1,239.413	3	219.276	179	337.254	0.000***
a2_9	Job creation/employment	1,205.923	3	283.028	179	254.228	0.000***
a2_12	Health	1,173.360	3	248.618	179	281.598	0.000***
a2_13	Financial markets	877.570	3	372.113	179	140.714	0.000***
a2_14	Trade and exports	683.677	3	441.941	179	92.304	0.000***
a2_17	Natural resource management	1,011.190	3	328.460	179	183.688	0.000***
a2_18	Anti-corruption	1,242.007	3	357.010	179	207.575	0.000***
a2_22	Economic growth	1,087.653	3	328.151	179	197.765	0.000***
Sustainability development factors							
a2_16	Agriculture	475.482	3	803.775	179	35.297	0.000***
a2_19	Climate change	857.860	3	577.168	179	88.684	0.000***
a2_23	Disaster risk management	695.983	3	507.635	179	81.805	0.000***
a2_25	Non-communicable diseases	684.785	3	531.805	179	76.831	0.000***

Note: Cluster analysis has been conducted on a set of 183 data units, for which the respondents have assessed all the variables contained in the table; statistically significant at 1%
Source: Authors' work, based on the World Bank (2018)

Table 7.
ANOVA table, $h = 15$ variables, $k = 4$ clusters, $n = 183$ respondents

Variable code	Cluster No. of respondents % of respondents	C1-HE-HS 59 32%	C2-HE-MS 80 44%	C3-HE-LS 15 8%	C4-LE-LS 29 16%	Total 183 100%
Economic development factors						
a2_3	Private sector development	9.73	8.98	7.93	3.38	8.25
a2_4	Education	9.81	9.39	9.00	2.41	8.39
a2_5	Public sector governance/reform	9.81	9.10	8.67	2.28	8.21
a2_12	Job creation/employment	9.78	8.70	8.67	2.21	8.02
a2_13	Health	9.66	8.76	8.40	2.24	7.99
a2_14	Financial markets	9.24	7.98	7.73	2.66	7.52
a2_17	Trade and exports	9.05	8.39	6.73	3.45	7.68
a2_18	Natural resource management	9.71	8.84	7.33	2.83	8.04
a2_20	Anti-corruption	9.76	8.73	6.73	2.14	7.85
a2_22	Economic growth	9.76	8.89	7.07	2.66	8.03
Sustainability development factors						
a2_16	Agriculture	7.58	7.75	4.67	3.59	6.78
a2_19	Climate change	9.24	7.45	5.00	2.90	7.10
a2_23	Disaster risk management	9.25	7.54	6.13	3.38	7.32
a2_25	Non-communicable diseases	8.81	7.23	4.13	3.45	6.89

Note: Cluster analysis has been conducted on a set of 183 data units, for which the respondents have assessed all the variables contained in the table
Source: Authors' work, based on the World Bank (2018)

Table 8.
Cluster means

4.3.1 *Comparison based on demographics.* This chapter observes the respondents according to their cluster membership and demographic characteristics. In addition, the results of the conducted chi-square tests are provided, which should reveal whether there is a statistical difference in the distribution of respondents across all four clusters according to gender, age and the employment sector.

According to the results given in Table 9, most respondents in the first, second and the fourth cluster are used in the public sector. On the other hand, most respondents in the third sector are employed in the private sector. The chi-square test detects the significant difference between the clusters at the 5% level (chi-square = 15.390, p-value = 0.017).

In the research, the majority of respondents were males. Therefore, it is unsurprising that most included respondents are males in all the four clusters (Table 10). However, their share ranges from 67.8% in the first cluster to 93.3% in the third cluster. Because of such a large difference, the chi-square test indicates a statistical difference between the clusters at the 10% level (chi-square = 6.635, p-value = 0.084).

The most represented age group in all clusters is 46–55 (Table 11). However, the difference of respondents according to the age group across the clusters is not statistically significant (chi-square = 8.620, p-value = 0.473).

4.3.2 *Comparison based on the shared prosperity goals.* Figure 6 presents the percentage of respondents who have selected a specific shared development goal as one of the two most important key pathways towards economic development and equity in the UAE.

According to Figure 6, most respondents selected more diversified economic growth (42%), better employment opportunities for young people (37%) and better-quality education and training that ensure better job opportunities (37%). On the other hand, only 1% of respondents selected better energy efficiency, and 3% selected better employment opportunities for women.

Sector	N	C1-HE-HS (%)	C2-HE-MS (%)	C3-HE-LS (%)	C4-LE-LS (%)	Total (%)	Chi-square (p-value)
Public	100	*60.0*	*55.0*	28.6	*67.9*	56.5	15.390
Private	55	23.6	33.8	*71.4*	17.9	31.1	(0.017)**
NGO	22	16.4	11.3	0.0	14.3	12.4	
Totala	177	100.0	100.0	100.0	100.0	100.0	

Notes: [a]For six respondents, values regarding the employment sector are missing; ** statistically significant at 5%
Source: Authors' work, based on the World Bank (2018)

Table 9.
Relationship between the cluster membership and the sector of employment

Gender	N	C1-HE-HS (%)	C2-HE-MS (%)	C3-HE-LS (%)	C4-LE-LS (%)	Total (%)	Chi-square (p-value)
Female	44	32.2	18.8	6.7	31.0	24.0	6.635
Male	139	*67.8*	*81.3*	*93.3*	*69.0*	76.0	(0.084)*
Total	183	100.0	100.0	100.0	100.0	100.0	

Note: *Statistically significant at 10%
Source: Authors' work, based on the World Bank (2018)

Table 10.
Relationship between the cluster membership and gender

Table 12 presents the respondents' selection of the two most important key pathways towards economic development and equity in the UAE according to their cluster membership.

The respondents from the first cluster have the highest share of respondents who selected the answer yes at the variables: better opportunity for the poor expats who live in urban areas (8.6%) and more reliable social safety net (8.6%).

Similarly, the respondents from the second cluster also had the highest share of positive answers at two variables, those being: better employment opportunities for women (3.8%) and more diversified economic growth (48.7%).

The respondents from the third cluster had the highest share of confirmative answers at the following variables: better employment opportunities for young people (66.7%), greater access to micro-finance for the poor (7.1%), greater access to health and nutrition for citizens (7.1%) and better entrepreneurial opportunities (e.g. to start SME) (42.9%).

The respondents from the fourth cluster have, more than the respondents from other clusters, emphasized the importance of the following five variables: greater voice and participation for citizens to help ensure greater accountability (14.3%), a growing middle

Age	N	C1-HE-HS (%)	C2-HE-MS (%)	C3-HE-LS (%)	C4-LE-LS (%)	Total (%)	Chi-square (p-value)
35 and under	29	16.9	12.5	13.3	24.1	15.8	8.620
36–45	49	25.4	32.5	6.7	24.1	26.8	(0.473)
46–55	76	*39.0*	*41.3*	*66.7*	*34.5*	41.5	
56 and above	29	18.6	13.8	13.3	17.2	15.8	
Total	183	100.0	100.0	100.0	100.0	100.0	

Source: Authors' work, based on the World Bank (2018)

Table 11.
Relationship between
the cluster
membership and age

Source: Authors' work, based on the World Bank (2018)
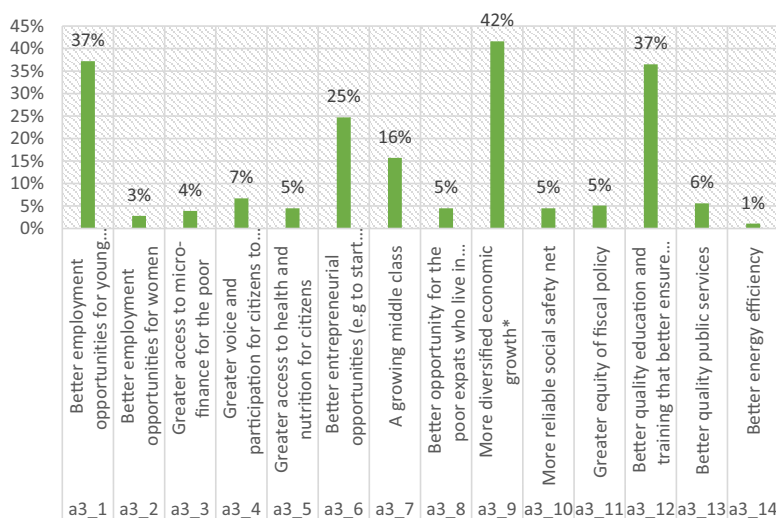
Figure 6.
Percentage of
respondents who
have selected a
specific shared
development goal as
one of the two most
important key
pathways towards
the economic
development and
equity in the UAE

Table 12.
Shared development goals that the cluster members rate as one of the two most important key pathways towards the economic development and equity in the UAE

Code	One of the two most important key pathways	Ans.	C1-HE-HS (%)	C2-HE-MS (%)	C3-HE-LS (%)	C4-LE-LS (%)	Total (%)	Chi-square (p-value)
a3_1	Better employment opportunities for young people	No	67.8	68.8	33.3	51.7	62.8	8.945 (0.030**)
		Yes	32.2	31.3	66.7	48.3	37.2	
a3_2	Better employment opportunities for women	No	96.6	96.2	100.0	100.0	97.2	1.608 (0.658)
		Yes	3.4	3.8	–	–	2.8	
a3_3	Greater access to micro-finance for the poor	No	96.6	96.2	92.9	96.4	96.1	0.429 (0.934)
		Yes	3.4	3.8	7.1	3.6	3.9	
a3_4	Greater voice and participation for citizens to help ensure greater accountability	No	94.8	94.9	92.9	85.7	93.3	3.088 (0.378)
		Yes	5.2	5.1	7.1	14.3	6.7	
a3_5	Greater access to health and nutrition for citizens	No	93.1	96.2	92.9	100.0	95.5	2.403 (0.493)
		Yes	6.9	3.8	7.1	–	4.5	
a3_6	Better entrepreneurial opportunities (e.g. to start SME)	No	79.3	78.2	57.1	67.9	75.3	4.169 (0.244)
		Yes	20.7	21.8	42.9	32.1	24.7	
a3_7	A growing middle class	No	84.5	83.3	92.9	82.1	84.3	0.928 (0.819)
		Yes	15.5	16.7	7.1	17.9	15.7	
a3_8	Better opportunity for the poor expats who live in urban areas	No	91.4	96.2	100.0	100.0	95.5	4.353 (0.226)
		Yes	8.6	3.8	–	–	4.5	
a3_9	More diversified economic growth	No	53.4	51.3	78.6	78.6	58.4	9.248 (0.026**)
		Yes	46.6	48.7	21.4	21.4	41.6	
a3_10	More reliable social safety net	No	91.4	97.4	100.0	96.4	95.5	3.692 (0.297)
		Yes	8.6	2.6	–	3.6	4.5	
a3_11	Greater equity of fiscal policy	No	98.3	93.6	100.0	89.3	94.9	4.252 (0.235)
		Yes	1.7	6.4	–	10.7	5.1	
a3_12	Better quality education and training that ensure better job opportunities	No	63.8	62.8	71.4	60.7	63.5	0.491 (0.921)
		Yes	36.2	37.2	28.6	39.3	36.5	
a3_13	Better quality public services	No	94.8	93.6	100.0	92.9	94.4	1.070 (0.784)
		Yes	5.2	6.4	–	7.1	5.6	
a3_14	Better energy efficiency	No	100.0	97.4	100.0	100.0	98.9	2.593 (0.459)
		Yes	–	2.6	–	–	1.1	

Note: **Statistically significant at 5%
Source: Authors' work, based on the World Bank (2018)

class (17.9%), greater equity of fiscal policy (10.7%), better quality education and training that ensure better job opportunities (39.3%) and better-quality public services (7.1%).

The chi-square tests have indicated that the observed differences between clusters are statistically significant at 5% only for the variable better employment opportunities for young people (chi-square = 8.945; p-value = 0.030) and the variable more diversified economic growth (chi-square = 8.248; p-value = 0.026).

4.3.3 Comparison based on the media usage. Figure 7 shows the percentage of respondents who have selected specific sources of information about economic and social development issues in the UAE. According to the results, most respondents convincingly emphasized the internet as the most important source of information about economic and social development issues in the UAE. On the other hand, radio and television, both local and international, were selected by less than 10% of respondents.

Table 13 presents the distribution of respondents' selection of the most important two sources of information about economic and social development issues in the UAE according to their cluster membership.

The first cluster has the highest share of respondents that selected the answer yes at the variables: international radio (6.8%), international television (11.4%) and the internet (72.7%).

The respondents from the second cluster had the highest share of positive answers at only one variable, i.e. international newspapers (48.7%).

The respondents from the third cluster had the highest share of confirmative answers at only one variable (local newspapers – 50%).

The respondents from the fourth cluster emphasized the importance of the following three variables more than the respondents from other clusters: local radio (9.1%), local television (13.6%) and social media (40.9%).

The chi-square tests have indicated that the observed differences between clusters according to various media used are not statistically significant.

4.3.4 Cluster profiles. Figure 8 shows the cluster means for economic and sustainable development factors. One can observe that the highest cluster mean values belong to
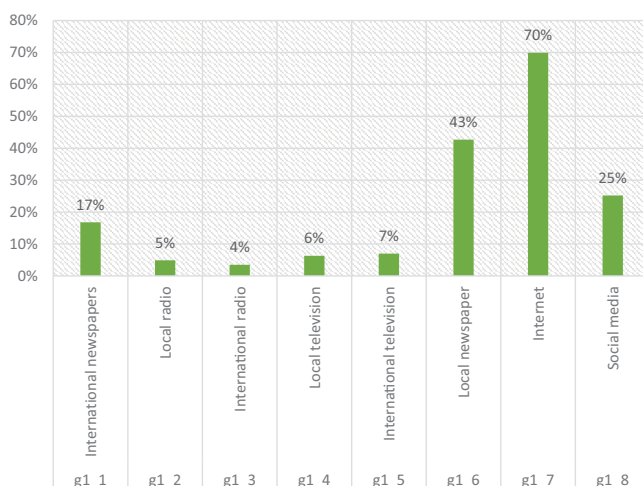
Figure 7.
Percentage of respondents who have selected specific sources of information about economic and social development issues in the UAE

Source: Authors' work, based on the World Bank (2018)

Code	One of the two most important key pathways	Ans.	C1-HE-HS (%)	C2-HE-MS (%)	C3-HE-LS (%)	C4-LE-LS (%)	Total (%)	Chi-square (p-value)
g1_1	International newspapers	No	86.4	78.5	83.3	90.9	83.2	2.297 (0.513)
		Yes	13.6	21.5	16.7	9.1	16.8	
g1_2	Local radio	No	95.5	95.4	100.0	90.9	95.1	1.472 (0.689)
		Yes	4.5	4.6	–	9.1	4.9	
g1_3	International radio	No	93.2	98.5	100.0	95.5	96.5	2.684 (0.443)
		Yes	6.8	1.5	–	4.5	3.5	
g1_4	Local television	No	97.7	93.8	91.7	86.4	93.7	3.304 (0.347)
		Yes	2.3	6.2	8.3	13.6	6.3	
g1_5	International television	No	88.6	96.9	91.7	90.9	93.0	3.007 (0.391)
		Yes	11.4	3.1	8.3	9.1	7.0	
g1_6	Local newspapers	No	61.4	52.3	50.0	68.2	57.3	2.286 (0.515)
		Yes	38.6	47.7	50.0	31.8	42.7	
g1_7	Internet	No	27.3	27.7	33.3	40.9	30.1	1.628 (0.653)
		Yes	72.7	72.3	66.7	59.1	69.9	
g1_8	Social media (blogs, Facebook, Twitter, YouTube, …)	No	79.5	75.4	83.3	59.1	74.8	3.884 (0.274)
		Yes	20.5	24.6	16.7	40.9	25.2	

Source: Authors' work, based on the World Bank (2018)

Table 13.
Media that the cluster members rate as one of the two most important sources of information about economic and social development issues in the UAE

The chart shows cluster means for Economic motivational factors (Private sector development, Education, Public sector governance/reform, Job creation/employment, Health, Financial markets, Trade and exports, Natural resource management, Anti corruption, Economic growth) and Sustainability motivational factors (Agriculture, Climate change, Disaster risk management, Non-communicable disease), with series C1, C2, C3, C4.

Source: Authors' work, based on the World Bank (2018)

Cluster 1 (high economic – high sustainability), followed by Cluster 2 (high economic –
medium sustainability), Cluster 3 (high economic – low sustainability) and Cluster 4 (low
economic – low sustainability).

4.3.4.1 Cluster 1: high economic – high sustainability. Cluster 1 includes 59 or 32% of the
total respondents, out of which 32.2% are female. Most of the respondents, or 39%, belong to
the age group of 46 to 55, followed by 25.4% in the age range of 36 to 45, 16.9% in the age
group of 35 and under and 18.6% in the age group of 56 and above. It can be noticed that the
cluster means across the variables for this cluster are higher than in other clusters (above 9).
Members of this cluster, compared to other clusters, are more in favour of the following
shared prosperity goals: a better opportunity for impoverished ex-pats living in urban areas
and a more reliable social safety net in terms of shared prosperity goals. Respondents from
this cluster had the largest percentage of usage of the following media: international radio
(6.8%), international television (11.4%) and the internet (72.2%).

4.3.4.2 Cluster 2: high economic – medium sustainability. Cluster 2 includes 80 or 44%
of the respondents; 18.8% are female. Most of the respondents, or 41.3%, belong to the
age group of 46 to 55, followed by 32.5% in the age range of 36 to 45, 13.8% in the age
group of 56 and above and 12.5% in the age group of 35 and under. One can observe
that the cluster means for variables associated with economic incentive factors are
rather high. On the other hand, the means for variables connected to sustainability
motivating factors are lower than for the first cluster. Members of this cluster,
compared to other clusters, are more in favour of the following shared prosperity
goals: better employment opportunities for women and more diversified economic

growth. Respondents from this cluster had the largest percentage of usage of international newspapers (48.7%).

4.3.4.3 Cluster 3: high economic – low sustainability. Cluster 3 includes 15 or 8% of the total respondents, out of which 6.7% are female. Most of the respondents, or 66.6%, belong to the age group of 46 to 55, followed by 13.3% in the age group of 56 and above, 13.3% in the age group of 35 and under and 6.7% in the age group of 36 to 45. This cluster had the least number of responses. The cluster's variable means for variables connected to economic motivating factors might still be high. On the other hand, the means for variables connected to sustainability motivating factors are significantly lower than in the first and the second cluster. Members of this cluster, compared to other clusters, are more in favour of the following shared prosperity goals: better employment opportunities for young people, greater access to microfinance for the poor, greater access to health and nutrition for citizens and better entrepreneurial opportunities. Respondents from this cluster had the largest percentage of usage of local newspapers (50%).

4.3.4.4 Cluster 4: low economic – low sustainability. Cluster 4 includes 15 or 8% of the total respondents, out of which 6.7% are female. Most of the respondents, or 41.5%, belong to the age group of 46 to 55, followed by 26.8% in the age group of 36 to 45, 24.1% in the age group of 35 and under and 17.2% in the age group of 56 and above. Compared to the means in the other three groups, variable means for variables related to economic development and sustainability motivating factors are much lower. Members of this cluster are more in favour of the shared prosperity goals: greater voice and participation for citizens to help ensure greater accountability, a growing middle class, greater fiscal policy equity, better quality education and training to ensure better job opportunities and better-quality public services. Respondents from this cluster had the largest percentage of usage of the following media: local radio (9.1%), local television (13.6%) and social media (40.9%).

5. Discussion and conclusion
5.1 Summary of the research proposition testing
This paper explores and analyses stakeholders' perceptions of the development priorities and offers suggestions for more effective strategies to assist sustainable economic growth in the UAE. It provides a pioneering view on the topic and contributes to the existing literature in terms of comparing the perceived importance of various dimensions such as development priorities, shared prosperity indicators, media usage and demographic characteristics, and evaluates their impact on future progress in social and economic terms in the UAE intending to stimulate entrepreneurial activities.

In line with the paper's aim, the main research question asked: *What conflicts exist between stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE? What is the relationship between the stakeholders' characteristics (age, gender and media usage) and their attitudes towards the economic and sustainability goals?*

Four *RP*s were posed, and Table 14 summarises their testing results.

Multiple procedures were used for the analysis, including:

- descriptive statistical methods and the factor analysis;
- the cluster analysis wherein respondents were grouped according to the development priority goals using a fuzzy clustering method and identifying four clusters; and
- clusters were compared and elaborated based on respondents' preferences for the attainment of high or low economic and/or sustainable goals.

Code	Research proposition	Results %	Method
RP1	Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE are conflicted with economic priorities	Supported at 1	ANOVA comparison of clusters (Table 7)
RP2a	Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE are conflicted regarding the employment sector	Supported at 5	Chi-square (Table 9)
RP2b	Stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE are conflicted regarding gender	Supported at 10	Chi-square (Table 10)
RP2c	Perceptions of development priorities depend on stakeholders' age	Not supported	Chi-square (Table 11)
RP3a	Perceptions of development priorities differ based on perceptions of the importance of employment opportunities	Supported at 5	Chi-square (Table 12)
RP3b	Perceptions of development priorities differ based on perceptions of the importance of diversified economic growth	Supported at 5	Chi-square (Table 12)
RP4	Perceptions of development priorities differ depending on stakeholders' media usage	Not supported	Chi-square (Table 13)

Source: Authors' work, based on the World Bank (2018)

Table 14.
Results of research
proposition testing

The *RP1* investigated the stakeholders' perception of development priorities to achieve sustainable economic growth in the UAE, which are conflicted with economic priorities. A fuzzy cluster analysis was conducted, and four different clusters were extracted according to their perception of the economic and sustainable development priorities. The ANOVA analysis confirmed statistically significant differences among the clusters, which supports the *RP1*. The conclusion is that the UAE stakeholders strongly differentiate between economic and sustainable development priorities.

The *RP2* investigated the stakeholders' perceptions of development priorities to achieve sustainable economic growth in the UAE, which are conflicted regarding demographics. The chi-square analysis confirmed the statistically significant differences using chi-square according to the employment sector and gender, indicating that *RP2a* and *RP2b* are supported while there are no differences regarding age; thus, *RP2c* is not supported. The male respondents who work in the private sector support economic development goals more, while female respondents who work in the public sector support SDG.

The *RP3* questioned the perceptions of development priorities according to the shared prosperity goals, and the chi-square analysis was used for its testing. The respondents value employment opportunities more as a shared prosperity goal while supporting economic development, thus confirming *RP3a*. On the other hand, the respondents who value diversified economic growth as a shared prosperity goal, at the same time, support more strongly SDG, thus confirming *RP3b*.

The *RP4* investigates the presumption that the perceptions of development priorities differ depending on stakeholders' media usage. Although there are differences in the type of media used, they were not statistically significant, and *RP4* was not supported.

5.2 Theoretical implications
An important finding for the UAE is that respondents prioritize economic factors over sustainability. Specifically, economic growth, private and public sector development, job

creation and natural resource management are prioritized over climate change or disaster risk management. As the survey posed questions on:

- the development priorities of the UAE;
- the shared prosperity indicators; and
- media usage, the results of the survey comply with theoretical studies on employee cultural intelligence and the rate of adjustment to macro-environment, especially concerning female employees (Thomas *et al.*, 2015; Nassar and Tvaronavičienė, 2021).

Four clusters examined differences in posed survey questions based on:

(1) high economic and high sustainability values of respondents;

(2) high economic and middle sustainability values of respondents;

(3) high economic and low sustainability values; and

(4) low economic and low sustainability values.

The study has shown statistically significant differences between clusters depending on respondents' employment sector, indicating higher prioritization of sustainability in the public sector. This is in line with theory as employees in the public sector had a higher chance to adapt to the national culture, i.e. use their cultural intelligence quicker, which demands the UAE to shift its focus from a resource-driven economy to other sectors. Moreover, it aligns with the prestige of obtaining a public sector job in contrast to jobs in private firms (Facchini *et al.*, 2021).

Previous research has shown that females receive less mentoring than males and are not as engaged in work life (Tahir and Raza, 2020; Sandhu *et al.*, 2021) and this study confirms a lower share of females in the sample. Namely, the prioritization of economic and sustainable values shows significant differences between female and male attitudes at the 10% significance level. Males are more likely to affirm high economic and low sustainability priorities than females, but differences are evident in all clusters, pointing to an ambiguous conclusion.

Finally, there are no relevant differences in cluster means regarding age, implying no inter-generational gap between respondents. In a sense, this study complements previous studies (Facchini *et al.*, 2021), showing that the government has made no significant progress in inducing entrepreneurship, i.e. preference for employment in the private sector. Young respondents in the sample confirmed that there are no statistically significant differences in age when it comes to economic or sustainability prioritization.

Both age and gender results align with the UAE's cultural and religious heritage and are supported by the previous findings (Tahir and Raza, 2020; Sandhu *et al.*, 2021).

Although there are no relevant differences regarding media usage, the results are intriguing and relevant for future investigation. For example, the respondents who value both economic and sustainability goals highly use international radio, international television and the internet more often. Conversely, respondents with low expectations from the economic and sustainability goals often use local radio and television. These results align with Reilly and Hynan (2014), who stress that all stakeholders need extensive media attention.

5.3 Policy-making implications
Several implications arise from the results of the empirical analysis related to the policymaking and decision-making process.

Better employment opportunities for young people have not been indicated as an important development goal for the UAE in all the three cluster groups except in the C3 (HE-LS) cluster. The same refers to the fact that better employment opportunities for women are not perceived as an important development goal. In a risk-averse environment, young people are not inclined to take risks and prefer employment in the public sector (Facchini *et al.*, 2021). If the government wants to see changes in this aspect, it should encourage a different type of education from an early age. This interesting finding should be used for future policy decisions relating to education.

Most of the workforce in the UAE consists of expatriates, primarily originating from developing economies, supporting the significance of greater access to micro-finance for the poor, greater access to health and nutrition for citizens and better opportunities for the poor, which were highly valued by all four clusters. These economic goals are oriented towards achieving minimum economic safety for a stable life but do not contradict sustainability goals. Still, as most of the goals mentioned above depend on the government, the government should consider a strategy to attain these goals sustainably.

When looking into more economy-oriented development goals, it is interesting that most respondents do not consider better entrepreneurial opportunities (e.g. to start SME) and better-quality education and training that ensure better job opportunities as an important development goal. These results align with the expectations since setting up a firm in the UAE is a very simple and cost-effective process which, again, is not a significant impediment to the economic development of the UAE. Better communication and media coverage, tax incentives and subsidies to incite corporate entrepreneurial opportunities should be introduced to foster growth in that direction. Corporate entrepreneurship is important for the UAE, as it offers opportunities for many public sector employees while increasing corporations' capability to attract financing (Chowdhury and Maung, 2013).

On the other hand, due to the technological and ecological developments in the past couple of decades, respondents consider more diversified economic growth to be an important development goal for the UAE, especially in the second cluster. It could be connected to the Saudi Vision 2030, which aims to transform the structure of the Saudi economy into a diversified and sustainable economy.

Furthermore, considering sources of information about economic and social development issues in the UAE, respondents have clearly stated that the internet is the most important source of information. At the same time, local and international newspapers, radio and television do not represent important sources of information about economic and social development issues in the UAE. Since respondents favour economic development over sustainability, a media effort might raise sustainability awareness. According to the research, males are more likely to confirm high economic and low sustainability priorities. There is no need to diversify media advertising by age as the study did not uncover meaningful age disparities, signifying any inter-generational gap between respondents. Hence, the relevant institutions should use these findings to promote and communicate beneficial policies to their citizens, especially those including sustainability and diversified growth arising from corporate entrepreneurship.

5.4 Limitations of the paper and future research

Since the paper's empirical basis is based on the survey developed and conducted by the World Bank (2018) in the UAE, certain limitations refer to the respondents' perceptions regarding the aim of each survey question. Furthermore, limitations can be found in a relatively small sample, a low response rate and a very small number of respondents from the UAE. However, the data set was used due to the diversity of stakeholders included in the

sample, which is a unique source of various opinions on economic and sustainability issues in the GCC region.

The paper was limited to exploring the importance of various economical and sustainability development factors that can potentially serve as development opportunities in the UAE. Thus, further research should focus on extending the regional analysis and consider a higher number of respondents. To increase the accuracy of the research, it is recommended that future research consider longitudinal data. This can be particularly useful in analyzing the trends and changes regarding development opportunities in the UAE.

Moreover, this study is a cross-sectional study conducted by the World Bank to assess the economic and sustainable development priorities in the various economic sectors before the COVID-19 pandemic. It would be useful to examine longitudinal data and compare them before and after the COVID-19 pandemic. Consequently, future research could explore and compare all GCC countries, take a deeper look into expatriate managers living in the UAE that are not from GCC countries, and thereby compare the role of females and female entrepreneurship in both.

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About the authors

Mirjana Pejić Bach is a full Professor at the Department of Informatics, Faculty of Economics in Zagreb. She holds a PhD in system dynamics modelling from the Faculty of Economics, University of Zagreb and was trained at the MIT Sloan School of Management in system dynamics and OliviaGroup in the field of data mining. Mirjana is the leader and collaborator of numerous projects in which she cooperates with Croatian companies and international organizations, mainly through European Union projects and the bilateral research framework. Her research areas are the strategic application of information technology in business, data science and simulation modelling, focusing on research methodology, qualitative and quantitative, especially multivariate statistics and modelling structural equations. Mirjana Pejić Bach is the corresponding author and can be contacted at: mpejic@efzg.hr

Assistant Professor Berislav Žmuk graduated at the major of Accounting, post-graduated in Statistical Methods for Economic Analysis and Forecasting and gained his PhD degree in Business Economics at the Faculty of Economics and Business, University of Zagreb. Currently, he is an Assistant Professor at the Department of Statistics, Faculty of Economics and Business, University of Zagreb, where he teaches the following subjects: Statistics, Business Statistics, Business Forecasting and Introduction to Economic Statistics. His main research fields include applications of statistics in business and economy, survey methodology and statistical quality control..

Tanja Kamenjarska is a Research Assistant at the Faculty of Economics and Business in Zagreb, University of Zagreb. She has obtained a Master Degree in Insurance Management at the Faculty of Economics – Skopje, Ss. Cyril and Methodius University in Skopje, Republic of North Macedonia and a Master Degree in Managerial Informatics at the Faculty of Business and Economics in Zagreb, Croatia. Her fields of research interest are management of information systems and innovation, quantitative economics, financial markets and institutions. She has participated in numerous workshops, conferences and seminars and is an author of 14 scientific papers published in domestic and international scientific journals.

Maja Bašić is a Lecturer at the University of Zagreb Faculty of Economics and Business, Department of International Economics. Her research focuses on internationalisation from firm and national perspective, innovation and economic development.

Bojan Morić Milovanović is an Associate Professor at the Institute of Public Finance (Croatia). Bojan holds a PhD in Business Administration and Management from the University of Zagreb (Croatia), an MBA from the University of Illinois (USA) and an MS in Strategic Design and Management from Parsons School of Design – The New School (USA). He was also educated at and held fellowship positions at Cornell University (USA), University of Hong Kong (China), City University of New York (USA), University of Udine (Italy) and London School of Economics and Political Science (UK). Bojan held various sales, operational and executive roles in managing and developing the supply side of high-profile oil and gas projects within the CIS region.