Supplementary Information

Table S1: Arabic words and its translations.

Arabic	English	Arabic	English
احب	I love	حبك	Crochet
احبك	I love you	حبيبتي	My love
اف	F	حبيي	Baby
اكره	I hate	دم	blood
الجنازة	The funeral	رب	God
الجنة	the Paradise	ربي	my Lord
الحب	the love	زفاف	wedding
الحزن	Sorrow	سعادة	Happiness
الحياة	Life	سوء	Ill
الخير	The good	شر	
السعادة Evil	Happinese	صعب	Hard
العظيم	Great	ضد	against
العيد	Eid	ضيق	tight
الفوز	the win	عبد	Slave
القبر	Grave	عيب	disadvantage
الله	Allah	قبر	Grave
الموت	the death	قلبي	My heart
النار	fire	كسر	broke down
ام	Mother	له	Allah
اموت	I die	مات	Die
امي	Mom	مبروك	Congratulations
أجمل	The most beautiful	محمد	Mohammed
أحبك	I love you	مريض	Patient
ألم	Pain	مستحيل	No way
أم	Mother	مقتل	Killing
أمي	Mom	موت	death
بالله	By God	ميت	dead
تبا	Damn	وفاة	death
تعبت	get tired	يعاني	Suffers
عيدكم _مبارك	eaydakum mubarak	حب	Love
عيد _الأضحى	Eid_Adha		

Validity Check

Prior to the larger analytic studies, we first conduct a brief validity check for some common sense words for both the Arabic and the English tweets in line with the previous studies [16,35]. The purpose is to make sure that our subsequent word-based analyses of tweets are actually meaningful.

Fig. S1(a) shows the hourly peak occurrences for the Arabic tweets with the morning words such as "good morning" and "morning" and the evening words such as "good evening" and "evening". As can be seen in the figure the morning peaks occur around 7:00 am and 8:00 am and the evening peak, albeit less pronounced, ensues around 6:00 pm up until 3:00 am, as expected.

Fig. S1(b) presents the hourly peak occurrences of the English tweets which contain morning words such as "morning", "breakfast"; these peaks occur around 6:00 am and 7:00am. However, the peak occurrences for evening words such as "night" and "dinner" happen around 11:00 pm to 3:00 am. These patterns are both intuitive and consistent with the findings of the previous research [18].
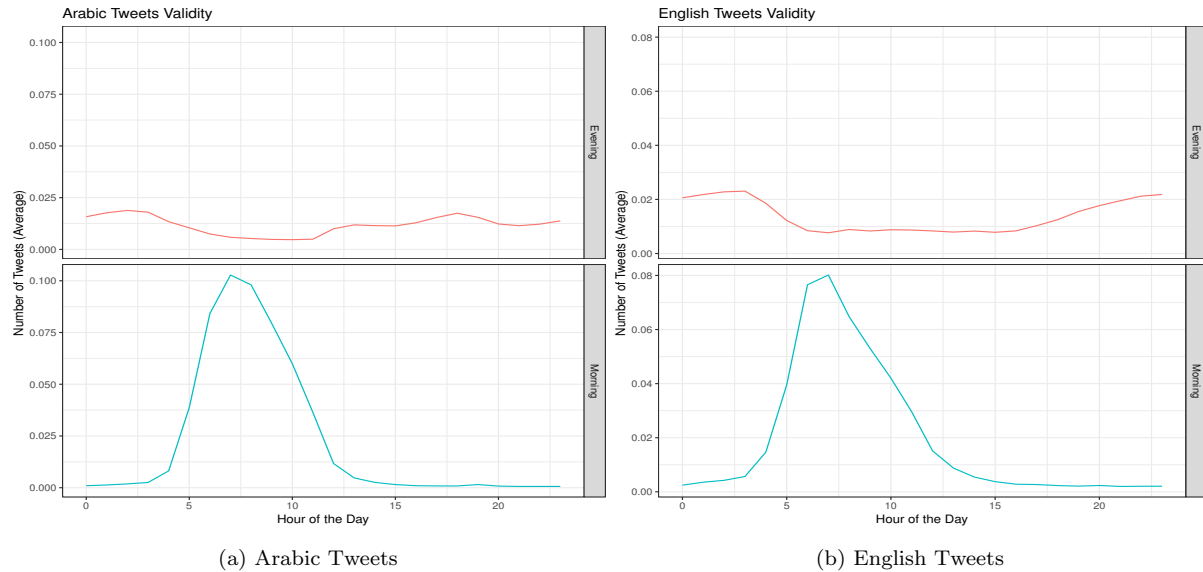
(a) Arabic Tweets   (b) English Tweets

Fig. S1: Tweets distributions of morning and evening words of Arabic and English tweets with morning and evening keywords over hours of the day.

Table S2: Peak days for Arabic tweets and most popular hashtags.

Emirates	Date	(#tweets,Hashtag)	Event
UAE	2016-07-06	(201 , عيدكم_مبارك) (84 , عيد_الفطر) (50 , عيدكم_المسلحة_قواتنا)	Eid
	2016-09-12	(56 , عيدكم_مبارك_البواسل_جنودنا) (56 , الأضحى_عيد) (35 , عيدكم_مبارك)	Eid
	2016-06-05	(222 , «رمضان_كريم) (81 , رمضان) (41 , علمي_عشر_ثاني_الفيزيا_امتحان)	Ramadan
Abu Dhabi	2016-09-06	(156 , نستطيع_معا) (108 , استراليا_الامارات) (96 , نستطيع_نعم)	Not clear
	2016-06-05	(217 , رمضان) (28 , رمضان_كريم) (19 , علمي_عشر_ثاني_الفيزيا_امتحان)	Ramadan
	2016-11-02	(222 , زايد_الشيخ_وفاه_ذكري) (31 , الشباب_العين) (24, زايد)	Sheikh Zayed memorial day
Dubai	2016-09-12	(15, عربية_خنبخ) (14 , الأضحى_عيد) (13 , مبارك عيدكم)	Eid
	2016-07-06	(84 , عيدكم_مبارك) (30 , الفطر_عيد) (14 , مبارك_سعيد_عيدكم)	Eid
	2016-07-08	(26, نول١١٠٢الف) (22 , نول٦١٠٢) (18 , دالاس)	Music
Ajman	2016-07-06	(8 , مبارك عيدكم) (5 , الفطر عيد) (3 , مبارك عيد)	Eid
	2016-06-05	(24 , والالسيرة) (8 , رمضان) (7 , دبي_قراء)	Ramadan
	2016-07-05	(12, رمضان) (8 , والالسيرة) (7 , المنوره_المدينه_تفجير)	Ramadan
Umm Al Quwain	2016-07-06	(2, المبارك) (1 , أمين_اللهم) (1 , مبارك_عيدكم_المسلحة_قواتنا)	Eid
	2016-06-05	(3, رمضان) (1 , رمدن) (1 , بلسنتكس)	Ramadan
	2016-05-28	(1, عيناوي) (1 , رمدن) (1 , الجزيرة_العين)	Sport
Fujarirah	2016-12-02	(51 , ٥٤_الوطني_اليوم) (27 , ١٧٩١_ديسمبر_٢) (11 , ٥٤٥ه_الوطني_اليوم)	National Day
	2016-09-12	(5 , مبارك_عيدكم_البواسل_جنودنا) (2 , مبارك_عيدكم) (2 , بخير_وانتم_عام_كل)	Eid
	2016-07-06	(13 , مبارك_عيدكم) (6 , مبارك_عيدكم_المسلحة_قواتنا) (4 , الجماعيه_الفيبوه)	Eid
Sharjah	2016-07-06	(19 , الفطر_عيد) (17 , مبارك_عيدكم) (16 , مبارك_عيدكم_المسلحة_قواتنا)	Eid
	2016-09-12	(11, الخليج_صحيفة) (11 , مختارة_شعراء) (6 , الأضحى_عيد)	Eid
	2014-07-28	(10, الفطر_عيد) (10 , العيد) (8 , مبارك_عيد)	Eid
Ras Al Khaimah	2016-09-12	(6 , مبارك_عيدكم_البواسل_جنودنا) (4 , الأضحى_عيد) (3 , بخير_وانتم_عام_كل)	Eid
	2016-07-06	(13 , مبارك_عيدكم) (7 , الفطر_عيد) (4 , المبارك)	Eid
	2017-06-25	(10 , الحكام_يستقبل_الدولة_رئيس) (12 , الفطر_عيد) (4 , المبارك)	Eid

Table S3: Peak days for English tweets and most popular hashtags.

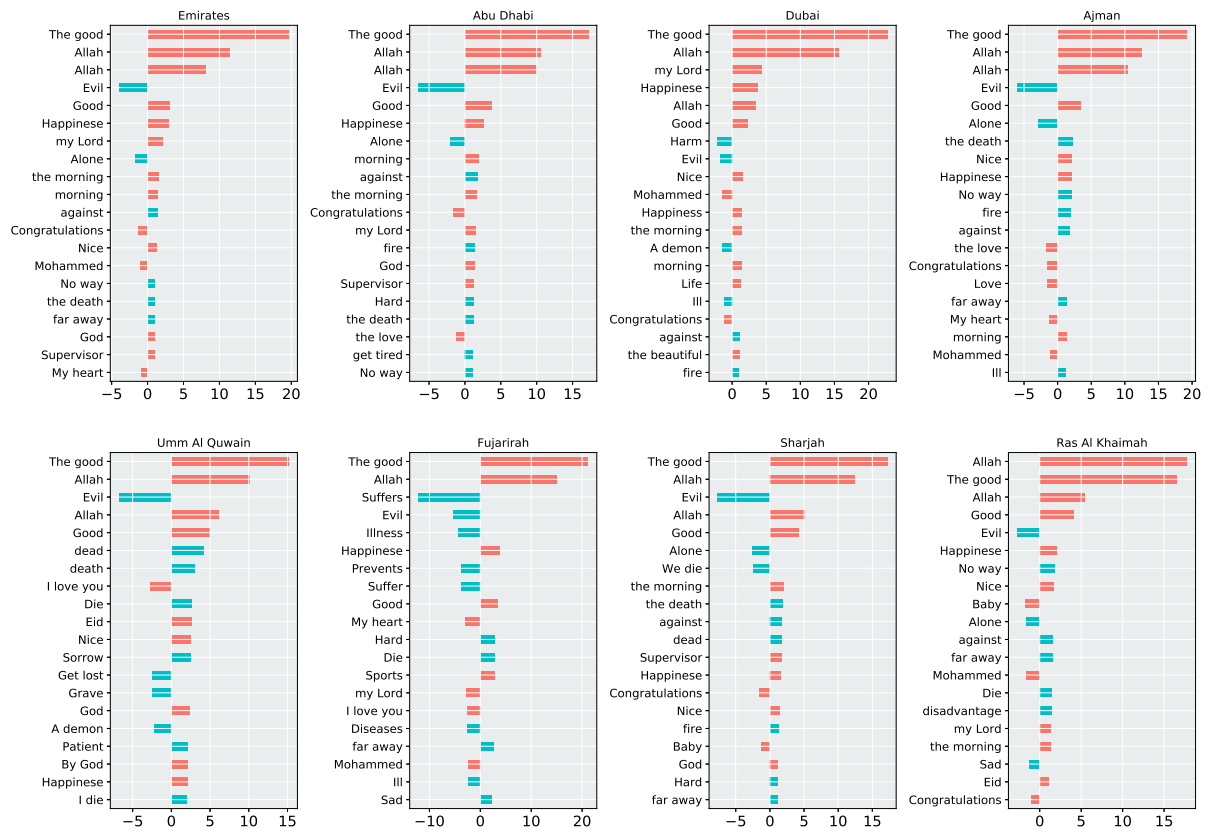| Emirates	Date	(#tweets,Hashtag)	Event
UAE	2017-01-01	(255 , happynewyear) (120 ,newyear) (92 ,burjkhalifa)	New Year
	2016-01-01	(312 , happynewyear) (217 , aldubhappybaedayalden) (164 , aldubwelcomes2016)	New Year
	2015-10-24	(6884 , aldubebtamangpanahon) (378 , pushawardslizquens) (135, aldubebtamangpahanon)	Filipino program
Abu Dhabi	2016-11-27	(160 , abudhabigp) (138 , f1) (47 , formula1)	Sport
	2015-11-28	(156 , abudhabigp) (98 , aldubstaystrong) (88 , f1)	Sport
	2017-01-01	(65 , happynewyear) (43 , aldenat25) (32, aldubhbdalden)	New Year and Filipino program
Dubai	2016-01-01	(204 , happynewyear) (119 , aldubhappybaedayalden) (107 , aldubwelcomes2016)	New Year
	2017-01-01	(161 , happynewyear) (89 , burjkhalifa) (82 , newyear)	New Year
	2015-12-31	(157 , happynewyear) (112 , aldub24thweeksary) (102 , mydubainewyear)	New Year
Ajman	2016-01-01	(7 , goodloveneverdies) (7 , dsf2016) (5 , dubai)	Not clear
	2016-07-16	(13 , qandeelbaloch) (8 , queen) (4 , pakistan)	Not clear
	2016-10-01	(1 , hellooctober) (1 , wassaymughal) (1 , octoberianrocks)	Not clear
Umm Al Quwain	2016-01-01	(3 , happynewyear) (2 , villaimelda) (2 , newyear2016)	New Year
	2016-03-04	(2 , kanhaiyakumar) (1 , goodnight) (1 , gulfcraft)	Not clear
	2016-10-14	(1 , serious) (1 , cousins)	Not clear
Fujarirah	2015-12-02	(6 , uae) (3 , stylish_collection) (3 , uaapfinals)	Not clear
	2016-10-07	(7 ,lionheartroarsincinemas) (1 ,fashionexpression) (1 , artphoto)	Style
	2015-10-16	(4 , bull) (4 , fight) (3 , theshadesandscarf)	Not Clear
Sharjah	2016-01-01	(73 , aldubhappybaedayalden) (22 , happynewyear) (12 ,aldubwelcomes2016)	New Year and Filipino program
	2015-11-12	(65 , showtimetomiho) (37 , sibf15) (33 , aldub17thweeksary)	Filipino program
	2015-09-26	(829 , aldubebforlove) (31 , showtimekapamilyaday) (16 , aldubandproud)	Filipino program
Ras Al Khaimah	2015-12-02	(35 , mamaredcarpet) (7 , aldublovegoeson) (5 ,aldub20thweeksary)	Song
	2016-12-02	(5 , uaenationalday) (4 , wakeboarding) (3 , holiday)	National Day
	2016-01-01	(3 , happynewyear) (3 , aldubhappybaedayalden) (2 , aldubwelcomes2016)	New Year and Filipino program

Fig. S2: Arabic Word shift graph for happiest hour for each city.
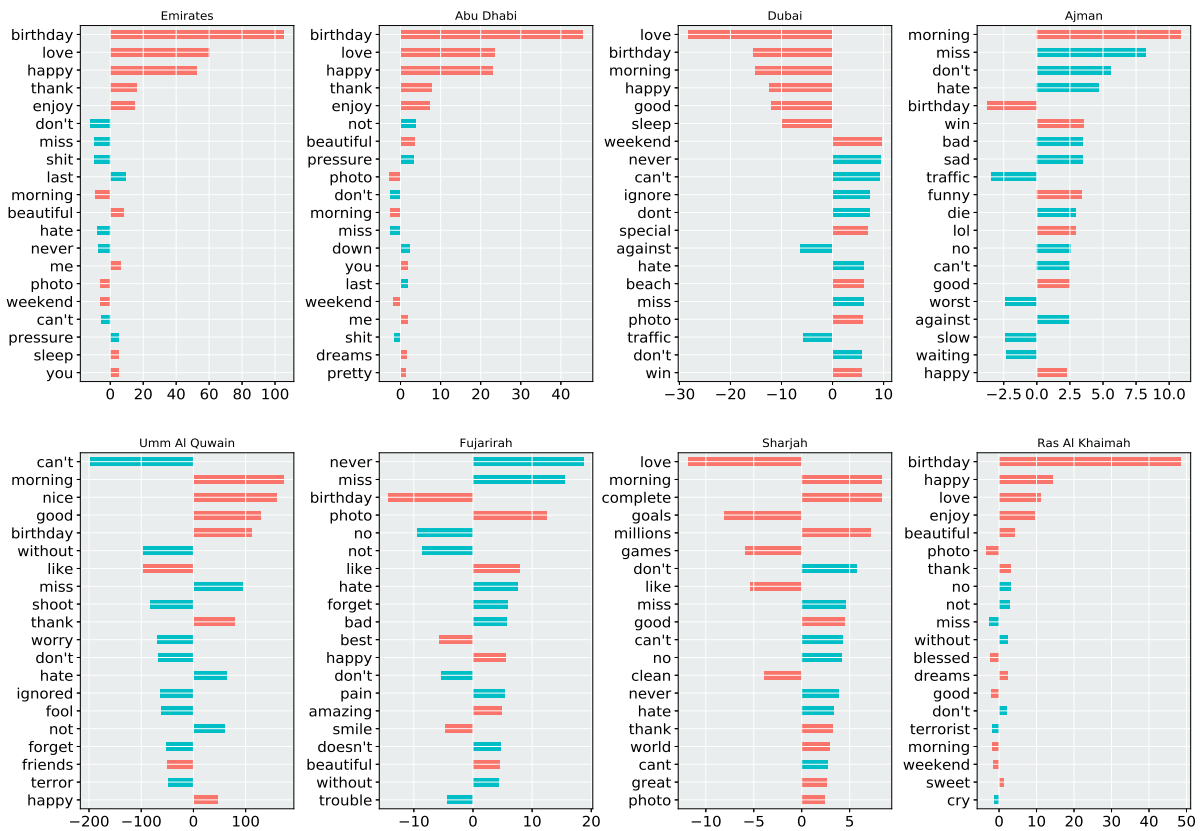

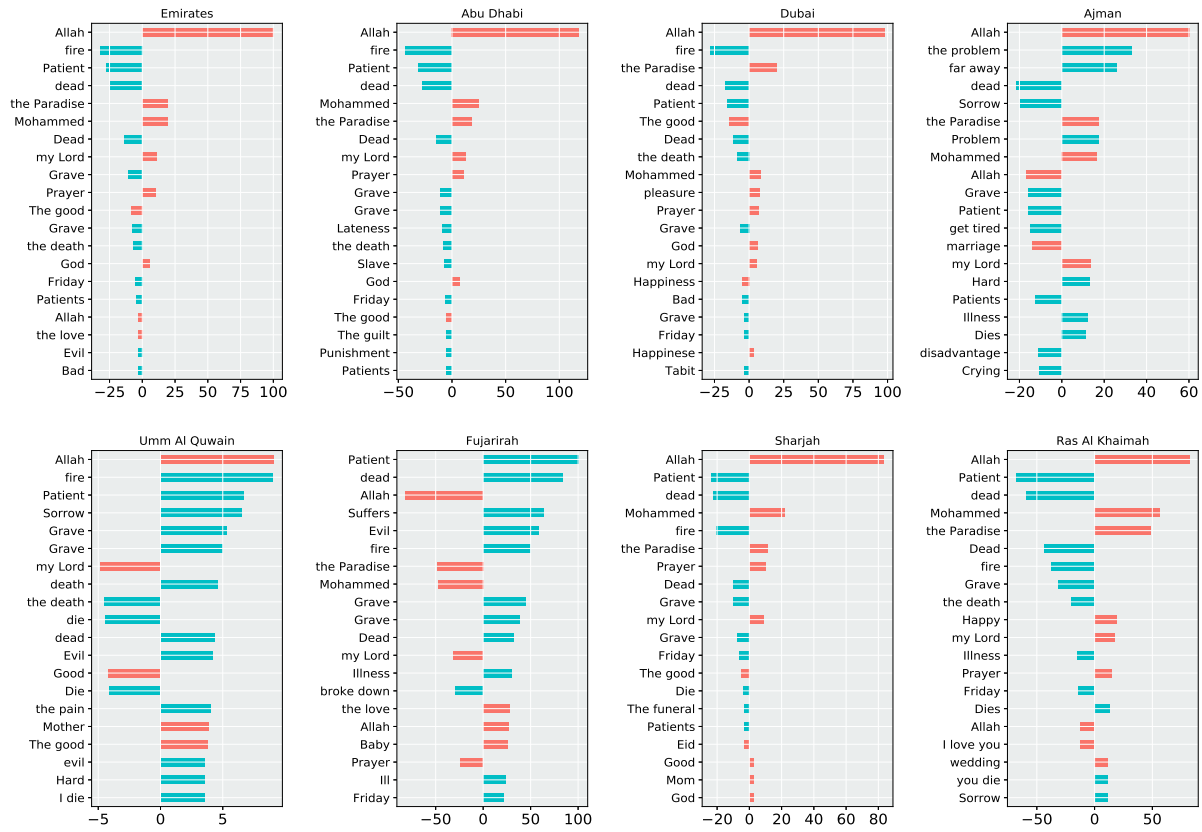Fig. S3: English Word shift graph for happiest hour for each city.

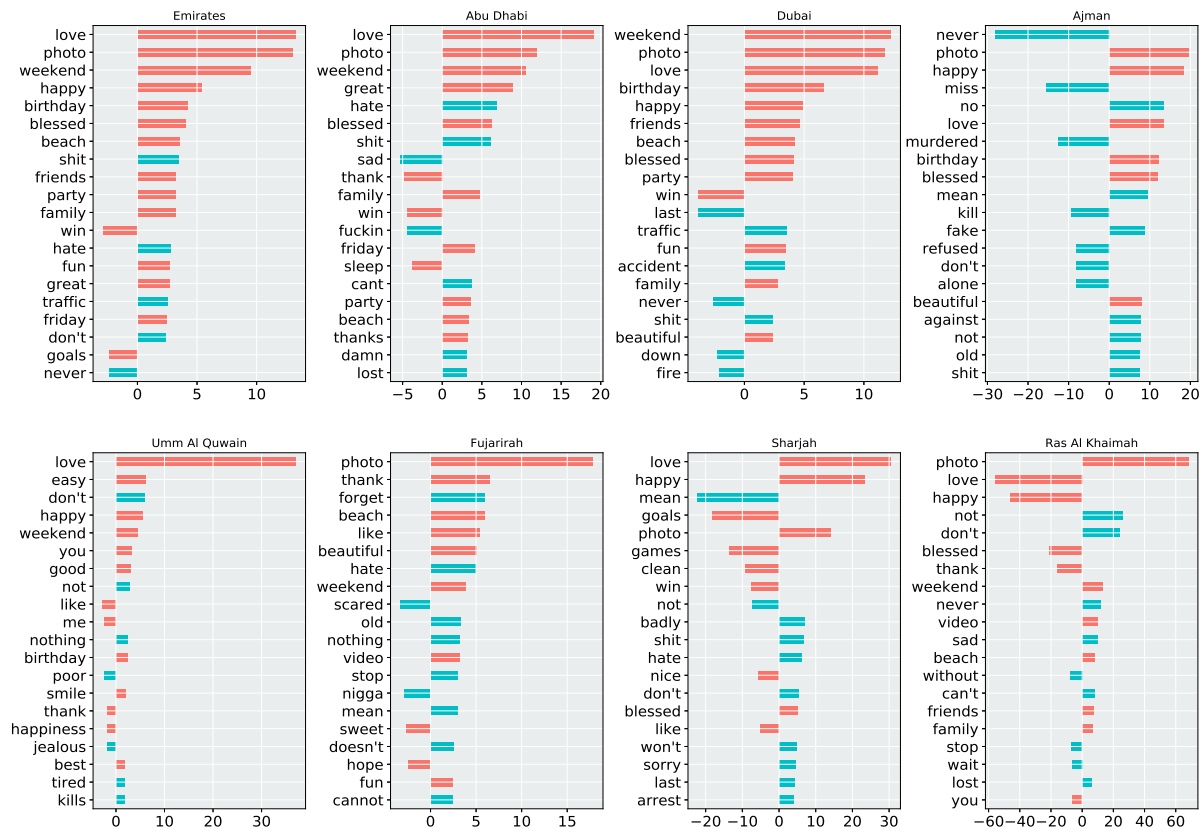Fig. S4: Arabic word shift graph for the happiest day of the week of each city.

Fig. S5: English word shift graph for the happiest day of the week of each city.

Fig. S6: Arabic word shift graph for the happiest month of each city.