

# **Communicative Ecology of Hajj Pilgrims and Its Impact on Perceived Satisfaction with the Services Provided by the Saudi Government**

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**Abstract:** This study has examined the problems' related to communicative ecology of pilgrim sojourners in Saudi Arabia and its impact on the levels of their satisfaction with the services provided in a probability sample of 439 Pakistani pilgrims. The sojourners' communication ecology in problem situations comprises eleven communication sources. Of these, contacts with family/friends and co-pilgrims made top of the list followed by such community organization sources like information counters, tour operators, and the Pakistani Hajj mission officials. The mediated sources of contacts with the ethnic newspaper (the Urdu language newspaper), and the mainstream Saudi mass media ranked the 3<sup>rd</sup> and the 4<sup>th</sup>. The Internet and the digital billboards were each cited in less than 10 percent of the responses. Stepwise multiple regressions revealed that the most important sources of impact on satisfaction were: contact with community organizations, family/friends and co-pilgrims, the ethnic newspaper, and the digital screens. Implications of the impact on satisfaction are discussed for communicating with the pilgrims.

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**Keywords:** communication ecology, Communication channel, pilgrims' satisfaction, pilgrimage communication strategies.

**Abstrak:** Kajian ini adalah untuk mengenal pasti masalah yang wujud berkaitan ekologi komunikasi ke atas 439 orang Jemaah haji dari negara Pakistan semasa mereka berada di Arab Saudi. Selain itu, kajian ini turut memperlihatkan tahap kepuasan mereka terhadap perkhidmatan yang disediakan untuk mereka. Permasalahan yang melibatkan ekologi komunikasi meliputi sebelas sumber komunikasi. Daripada kesebelas permasalahan tersebut, isu hubungan dengan ahli keluarga/rakan dan rakan Jemaah menjadi isu utama dan diikuti dengan masalah komunikasi dengan pihak seperti kaunter informasi, pihak pengendali haji dan pegawai Misi Haji daripada Pakistan. Manakala pada tempat ketiga dan keempat pula adalah hal-hal yang dilaporkan dalam suratkhobar etnik yang berbahasa Urdu dan media massa yang dikendalikan oleh pihak Arab Saudi. Selain daripada itu, sumber daripada Internet dan Paparan Digital pula mendapat respons kurang daripada sepuluh peratus. 'Stepwise multiple regressions' pula mendedahkan bahawa sumber kepuasan terpenting adalah hubungan dengan organisasi komuniti, ahli keluarga/rakan dan rakan-rakan Jemaah, suratkhobar etnik serta paparan digital. Implikasi terhadap impak kepuasan ini dibincangkan untuk dikomunikasikan bersama para Jemaah.

**Kata kunci:** ekologi komunikasi, Saluran komunikasi, kepuasan Jemaah, strategi komunikasi haji.

### **Significance and Rationale of the Study**

Underpinning most of the available communication-centric and the pilgrim-related social scientific research conducted by the academics in Saudi Arabia is the latent concern for how *best* to reach out to the pilgrims. The present study tries to advance discussions on the issue. In this regard, we assume that the pilgrims, in order to resolve their everyday problems, operate in the context of the best available communication choices or channels. That is, the study assumes that the use of a particular communication channel by the pilgrim-sojourners should be looked at in the context of all the other available communication channels and not in isolation from them, as is done in the communication ecology tradition of mass communication research. The broad research question in study, therefore, seeks to answer is: what communication connections do the Pakistani pilgrim-sojourners make to meet their everyday needs during their 6-week stay for the pilgrimage in the host country setting? That is, the study aims to map the pilgrim-sojourners' communication

behaviour in problem situations – their communicative ecologies. If the pilgrims' problem related communication connections result in some resolution of the situation then a logical corollary of the above research question ought to be as to how much satisfied the sojourners are with the quality of the services provided to them by the host and the native government agencies involved in serving them.

We believe, generating such type of information may be a significant prerequisite for taking a scientific approach to developing a pilgrims' reach strategy and may also help guide the efforts of researchers, communication practitioners, and the campaign planners that seek to effectively communicate with the diverse communities of the Hajj and 'Umrah sojourners. The assumption is that an optimum reach strategy, apart from the specific message content, has to exploit and engage the entire gamut of the sojourners' communicative ecology that acts as a conduit for the campaign messages.

### **Communication Ecology: What is it and why does it Matter?**

Marshall McLuhan (1964; 1994; 2005) coined the term “media ecology” highlighting the need for mass communication research to consider audience members' media connections in *context* of each other. According to Katz, Ang, & Suro (2010), the term communication ecology expands McLuhan's original idea to include individuals' interpersonal and organizational communication connections as well. Comprehensive conceptualization of communication ecology is found in Katz, Ang, & Suro (2010), Matsaganis, Katz, & Ball-Rokeach (2010), and in Wilkin, Ball-Rokeach, Matsaganis, & Cheong (2007). The substance of the conceptualization in these studies boils down to the following: that communication ecology refers to systems of interpersonal, mediated, and organizational communication options that individuals can connect with in order to achieve everyday life goals, and that people act after considering their communication channels in context of each other and they usually connect to more than one communication option for a particular type of goal, and that individuals' communication ecologies are goal-type specific. That is, the manifested communication ecologies will be different when the goal is to understand events in one's community from the ecologies, for example, of the play goals – goals to figure out what to do for relaxation and entertainment (Ball-Rokeach, 1998). In sum, a person's communication ecology is born out of goal

specific communication connections that he makes in context of other available and appropriate communication connections.

The idea that human communication behaviour is goal-directed and that people develop their own communication systems or ecologies that represent their web of interpersonal and media (new and old/mainstream and geo-ethnic) connections is a core idea in two ecological approaches in mass communication research; viz, communication infrastructure theory (CIT) and its theoretical precursor media system dependency (MSD) theory (Ball-Rokeach, 1985; Wilkin, Ball-Rokeach, Matsaganis, & Cheong, 2007).

The MSD posits that people rely on different media to various degrees in order to accomplish three main types of communication goals, which are the goals of: understanding, orientation, and play (Ball-Rokeach, Rokeach & Grube, 1984; Ball-Rokeach, 1998). Wilkin & Ball-Rokeach (2006, p.307) interpret these goal-types thus: The understanding goal involves making sense of one's own self or 'internal world' (self-understanding) and/or making sense of the social environment or the 'external world' (social understanding). The orientation goal has to do with interacting with other people effectively (interaction orientation) and/or navigating or problem-solving one's environment effectively (action orientation). The play goal has to do with entertaining or amusing oneself (solitary play) and/or having fun with or socializing with others (social play). Now, most of the specific problem-related communication goals of the pilgrim-sojourners are likely to primarily fall within the understanding and the orientation goal-types. For example, a sojourner's finding out about health, transportation & travel, or the Muttawwif's guidance and services available to him personally or to other sojourners in general relate to self and social understanding goals; whereas a pilgrim's interaction with others for the sake of interaction or to solve specific problems or taking other practical steps to solve specific problems will respectively imply interaction and action orientation.

The CIT expands the MSD theory in a number of ways. It allows for substitution of mass media with more inclusive means of communication like new and old, mainstream & geo-ethnic media, interpersonal communication channels, and communication outreach of community-based organizations. The CIT enlarges the notion

of communication ecology with communication infrastructure. Communication infrastructure of a target population comprises the population's neighbourhood storytelling network (NSN) and the related communication action context (CAC) within which the NSN unfolds. The NSN is broadly any kind of communicative action that is about the residents and their communities, and that relates to residents' lives in those communities (Ball-Rokeach, Kim, & Matei, 2001). The CIT differentiates among three levels of storytelling agents (micro, meso-, and macro level agents) on the basis of their primary storytelling referents and the imagined audience (Wilkin et al., 2007). The mainstream media become macro level storytellers when their stories are about the city, the nation or the world at large and their imagined audience include population at large of a city, a country or the world at large. At the meso-level the geo-ethnic media and other community organizations talk about specific geographic areas and/or specific populations like targeting new immigrant minorities. The meso-level storytellers are focused on specific residential communities (Wilkin et al., 2007). The micro-level storytellers include individuals in their varied interpersonal networks. CIT mainly focuses on meso- and micro-level storytellers and in terms of the theory strong ties between storytellers across levels indicate an integrated storytelling network, which is found associated with a number of criteria of civic engagement (Kim, 2003; Kim & Ball-Rokeach, 2006). The CAC, in the CIT, refers to the physical and social architecture of the residential neighbourhood of individuals within which communication takes place and it enables or constrains the NSN (Ball-Rokeach, 2003; Jung & Ball-Rokeach, 2004). In terms of the degree of communication incipience that a particular CAC affords the residents, the CAC could be characterized as open or closed. According to Wilkin and Ball-Rokeach (2006), the context comprises such elements as street safety, transportation, shopping areas, law enforcements, health care services etc.

In the pilgrim-sojourners' context, the pilgrims' residential condos, eateries and restaurants, and the neighbourhood mosques are some of the important features that bring people together and determine the degree of communication incipience of the context. The present study assumes the pilgrims' CAC as essentially a constant and looks at the NSN at the micro-individual levels, as communication among co-pilgrims, the meso levels as contacts with community organizations and the local/

ethnic media, and at the macro-levels as contacts with the national mass media as variables.

The literature has listed a number of advantages for searching communication ecologies of individuals over the more usual approach of studying a media form in isolation from the other communication channels. These advantages have been identified as ranging from maximizing the effectiveness of the campaign to understanding the dynamics of the processes unfolding within the communities having implications for the communities' cohesiveness and social capital (Wilkin et al., 2007; Ball-Rokeach et al., 2001). Nevertheless, the most important potential benefit of taking an ecological approach from the point of view of the present study is that this approach shall help us identify the most important communication channels for building a communication campaign and for maximizing its effectiveness in capturing attention and increasing the effect potential of the message. Additionally, learning the relative importance of communication channels for a target population may be potentially useful in conducting the cost-benefit analysis of alternatives and will have utility in better understanding the dynamics of the communication effects processes within various pilgrim communities.

### **Objectives of the Study**

Given the foregoing, the main objectives of the study are:

1. To statistically describe the pilgrim-sojourners' most important communication connections/behaviors for everyday needs.
2. To determine their degree of satisfaction with the services available to them.
3. To determine the degree to which the pilgrims' communication connections impact upon their level of perceived satisfaction with the services provided to them.

### **Methods**

A data-collection instrument, an interview schedule, was pretested on a limited set of pilgrim-sojourners and finalized after incorporating necessary additions/deletions to items in the questionnaire. The finalized instrument contained a mix of open and close-ended questions.

439 interviews were completed from a sample of Pakistani pilgrims selected through a combination of stratified-systematic and simple random sampling procedures. Buildings were stratified on the Hajj scheme of the occupants (the government scheme and the private scheme) and the size of the buildings determined on the basis of the number of pilgrims housed in a building (the small and the big buildings). A total of twenty buildings were systematically selected from the big and the small buildings' strata of each scheme (twelve from the government scheme, 8 small and 4 big buildings; & eight from the private scheme, 5 small & 3 big). The number of buildings under the private scheme was set lower due to the difficulty in tracking down the buildings' addresses as the private tour operators shifted the buildings of the pilgrims at least once during the four-week stay in Makkah al-Mukarramah. Sampling interval varied according to the size of the building-stratum involved and the number of buildings to be selected. From each building twenty male adult pilgrims were randomly selected for interview<sup>1</sup>. Final data collection was done by eight trained graduate students. Data collection was carried out within the housing units of the pilgrims during the time slots when most of the pilgrims were expected to be in their housing units.

### **Concepts and Measures**

Problems related communication ecology of the pilgrims conceptually refers to the pilgrims' actual or potential use of all the various communication channels available to them in problem situation. This means actual or potential use of various communication channels not in isolation from each other but in context. Thus, a pilgrim may use more than one channel in a situation. Additionally, it also implies that some communication channels might be more important useful and/or convenient than others. Thus a pilgrim's communication ecology implies a perceived rank order of the channels also in terms of their use and utility. Operationally, the pilgrims' problems' related communication ecology was tapped through two open-ended items like: "Thinking about all of the different ways of communicating and getting information or practical help about problems during your stay in the Kingdom – like using TV, radio, newspapers, pamphlets, books, magazines, the Internet, talking with the Mu'allim or his agents, tour operators, going to information counters, friends, talking to family, friends, and co-pilgrims, government officials, and dars (dars) organizers

in the neighbourhood masjid. Name the two most important channels that you used or would like to use to get information when faced with problematic situations?<sup>2</sup>

This open-ended query was followed by a fixed-response, 3-point scale ranging from 1 “never” to 3 “often”: How often do you use each one of the following sources? The sources ranged from Saudi mass media, digital screens, Internet sources/YouTube and local language media to co-pilgrims, tour operators, information counters, Hajj officials, & dars organizers in the neighbourhood mosques. These fixed response questions indicated the intensity of connections to various interpersonal, the mediated, and the community communication sources. Whereas contact with interpersonal and media sources were all single item measures, the communication contact with community organization was the mean score of a 5-item additive index comprising the pilgrim’s contacts with the Mu’allim (the KSA government-authorized hajj companies) or his agent, the tour operator, the sector-incharge of the Hajj-mission, the information counters, and the dars-organizers in the neighbourhood mosques.

Additionally, data on a number of demographic variables was collected. These included: the age in years, ratio level measure, the education as degree/certificate completed: an interval level 5-point scale ranging from 1 “Did not go to school” to 5 “Master or higher degree”, the Hajj family status of the pilgrims (a nominal variable indexed by whether performing Hajj alone or with female members of the family), the prior Hajj pilgrimages performed (number of times performed Hajj previously), the Hajj scheme under which performing Hajj (through the government system or through the private tour operators).

Degree of satisfaction with the services provided by various agencies in facilitating the pilgrim-sojourners during their stay in the Kingdom conceptually refers to the extent of the pilgrims’ perceived satisfaction with the services provided to them by various agencies. Operationally, perceived satisfaction with each agency was indexed by a 5-point Likert-type item ranging from 1 very dissatisfied with the service or behaviour of the officials to 5 very satisfied capturing the pilgrims’ degree of satisfaction with each of the service provider. Two types of satisfaction variable were looked at; viz, satisfaction with Saudi services & satisfaction with Pakistani services. Satisfaction with the

Saudi services was a mean score on a 7-item additive index comprising such items like satisfaction with the services provided by the Saudi government authorities in general, the Mu'allim or his agent, the immigrations authorities, the bus transport and the private taxi services, the crowd management services in and around the Haram area, and the housing facilities. Satisfaction with the Pakistani services was a mean score on a 3-item additive index comprising degree of satisfaction with the services in general of the Pakistani government and Hajj mission officials, the services provided by the tour operators/and their agents, and the services provided by the Pakistani health authorities.

### **Data Analysis and Results**

#### *Statistical Procedures Chosen*

Descriptive statistics were used for objectives 1 & 2. Specifically, univariate frequency distributions through multiple response analysis were examined and rank ordered for objective 1. Univariate frequency distributions and such descriptive statistics like measure of central tendency & dispersion were used for the second objective.

Data analysis strategy for the final objective entailed the use of stepwise multiple regression procedures where each of the two criterion indices of satisfaction was regressed on nine predictors in all; viz, three demographic predictors of age, education and the Hajj scheme and six communication contact variables. The four mediated communication contact variables of i) the extent of contact with the Saudi national media, ii) the extent of contact with the digital screens/billboards, iii) the extent of contact with the Internet, and iv) the extent of contact with the ethnic newspapers (the local Urdu language newspaper) -- all originally 3-point scales (ranging from 1=never to 3=often) -- was each transformed into a two-point scale (1=never contacts; 2=contacts the source) through collapsing together the sometime contacts and often contacts categories.<sup>3</sup> The other two communication contact variables were the extent of contact with family, friends and co-pilgrims [a 3-point scale (Mean=2.79; SD=.79)], and the extent of communication contact with community organizations [a 5-item mean additive index (Mean=1.39; SD=.30) comprising contacts with the Mu'allim or his agents, the Tour Operator/agents, the Sector Incharge, the Information Counters in the buildings, & the Dars Organizers in the neighbourhood Masjid]. Additionally, the collinearity diagnostics, the Durbin-Watson

statistics, the residual analysis, and the influence statistics were all looked at to assess the accuracy and the generalizability of the regression model used.

### *Results*

Tables 1, 2, 3, and 4 together provide data on the first objective of the study. This particular objective requires us to statistically describe the Pakistani pilgrims' most important communication connections for their everyday needs. Since the main purpose of the above objective is to identify the most significant communication channels from the standpoint of the communication practitioners and campaign planners who might seek to reach the Pakistani pilgrims for campaign or communication intervention purposes, we have decided to present findings on the entire communication ecology of the pilgrim-sojourners in problem situations. These tables tap four aspects of the pilgrims' communication ecology; viz, i) how each source relatively figures as the first most important source of contact in their communication ecology (Table 1); ii) how it figures as the second most important source of communication contacts (Table 2), iii) a rank order of the top two sources of communication contact (Table 3), iv) and the intensity of their contacts with each source in their ecology (Table 4).

In all, 11 types of communication sources showed up in the pilgrims' responses to the open-ended query about the two most important sources that the pilgrim-sojourners tended to contact in problem situations. The sources included the mediated sources like the national and the community mass media, the Internet, and the digital billboards sources, the micro-individual sources of contacting co-pilgrims, friends and family members, and such community organizational sources like the information/reception counters, dars organizers in the neighborhood masjid, the host government officials, and the Pakistan Hajj mission officials.

Table 1 rank orders the 11 sources as the first most important source. Hotel and the housing reception and information counters figure at the top of the list of the first most important sources followed by Saudi mass media, tour operators, the tied rank of family/friends and co-pilgrims and the Pakistan Hajj mission officials. The community/ethnic (Urdu language) newspaper occupied the fifth position. The Internet/YouTube, the dars organizers in the neighbourhood masjid, contact with *Mu'allims*,

and the Saudi government officials also infrequently appeared as the first most important source of contact in problem situations.

*Table 1  
Pilgrims' First Most Important Source of Communication Contact in Problems Situations in the Hajj of 1433 (H): A Rank Order of Frequencies*

Sr. No.	Communication Sources	Cases (N=391)	
		N	
1.	Hotel/Housing Reception Counter	76	19.2
2.	Saudi Mass Media	62	15.9
3	Tour Operator/His Agent	57	14.3
4 <sub>a</sub> .	Family/Friends/Co-pilgrims	45	11.5
4 <sub>b</sub> .	Pakistan Hajj Mission Officials	45	11.5
5.	Urdu-Language(Ethnic) newspaper	33	8.4
6.	Internet/YouTube	25	6.4
7.	Neighborhood Masjid/Dars Organizers	21	5.4
8	Digital Screens/EBBs	15	3.8
9 <sub>a</sub> .	Mu'allim/His Agent	7	1.8
9 <sub>b</sub> .	Saudi Hajj Ministry Officials	7	1.8

Table 2 gives a rank order of the second most important source. The top positions in this list are also occupied with some variations by the same sources with contacts with family/friends and co-pilgrims occupying the first position with the Urdu language newspaper here moving to second position from the fifth.

*Table 2*  
*Pilgrims' Second Most Important Source of Communication Contact in Problem Situations in the Hajj of 1433 (H): A Rank Order of Frequencies*

Sr. No.	Communication Sources	Cases (N=324)	
		N	
1.	Family/Friends/Co-pilgrims	79	24.4
2.	Urdu-Language(Ethnic) Media	68	21.0
3	Hotels/Housing Reception Counters	45	13.9
4.	Pakistan Hajj Mission Officials	34	10.5
5.	Saudi Mass Media	26	8.0
6.	Tour Operator/His Agent	24	7.4
7.	Digital Screens/EBBs	11	3.4
8 <sub>a</sub> .	Saudi Hajj Ministry & Government Officials	10	3.1
8 <sub>b</sub> .	Neighbourhood Masjid/ Dars Organizers	10	3.1
9.	Mu'allim/His Agent	9	2.8
10	Internet/YouTube	8	2.5

Table 3 summarizes and simplifies the findings of Tables 1 & 2, and gives a rank order of top two sources of communication contacts in problem situations among the eleven communication sources. Out of 715 multiple responses from 391 cases, the micro-individual source of contacts with family/friends and co-pilgrims figures at the top, the community organizational sources of contacting the reception/information counters, the tour operators, and the Pakistan Hajj ministry officials respectively occupy the second and the fifth positions, whereas the mediated sources of ethnic newspapers, the Saudi mass media, and the Internet/YouTube occupy respectively the third, the fourth, and the sixth positions.

*Table 3*  
*Pilgrims' Top Two Sources of Communication Contacts in Problem*  
*Situations in the Hajj*  
*Of 1433 (H): A Rank Order of Frequencies*

Sr. No.	Communication Sources	Responses (N=715)		Cases (N=391)
		N	%	%
1.	Family/Friends/Co-pilgrims	124	17.3	31.7
2.	Hotels/Housing Reception Counters	120	16.8	30.7
3.	Urdu-language (Ethnic Media)	101	14.0	25.8
4.	Saudi Mass Media	88	12.3	22.5
5 <sub>a</sub> .	Tour Operator/His Agent	80	11.4	20.5
5 <sub>b</sub> .	Pakistan Hajj Ministry Officials	79	11.0	20.5
6	Internet/YouTube	33	4.6	8.4
7.	Neighbourhood Masjid/Dars Organizers	31	4.3	7.9
8.	Digital Screens/EBBs	26	3.6	6.6
9.	Saudi Hajj/Other Officials	17	2.3	4.4
10	Mu'allim/His Agents	16	2.2	4.1

Table 4 reports the intensity of contact or the extent of contact with each of the communication source. The intensity of contact in the table is visible through the univariate distribution of the proportion

of pilgrims contacting each source on a 3-point scale ranging from 1= never to 3 = often, and through the mean use of each source. Extent of contact with family/friends and co-pilgrims (Mean= 2.39, SD=.79), is not only identified by most pilgrims as the topmost source of contact (cf. Table 3) but it is also used most often (Table 4). The private scheme pilgrims' contact with the tour operator/his agent (Mean= 2.10, SD =.82) is a source with the second most intense contact. The same source is ranked fifth in the top two most important sources of contact for the pilgrims (cf. Table 3). The hotels/housing information counters category of communication contact that ranks second in top two most important sources of communication contact (cf. Table 3) appears as the third source of most intense contacts as well in Table 6 (Mean = 2.06, SD=.79). The third and the fourth ranked top two most important sources of communication contact (cf. Table 3); viz, the ethnic newspaper (Mean=1.73, SD=.86; and the Saudi national media (Mean=1.72, SD=.78), respectively rank as the fourth and the fifth most used category of communication contacts. The least used communication sources for the Pakistani pilgrims, according to Table 5 respectively comprise the intensity of contacts with the Saudi officials (Mean=1.02, SD =.19), the Mu'allims/agents (Mean=1.17, SD= .43), the dars organizers in the neighborhood mosques (Mean=1.21, SD=.49), the Pakistani Hajj officials (Mean=1.23, SD=.49), the digital screens (Mean=1.24, SD=.49), and the Internet (Mean=1.25, SD=.59).

*Table 4*  
*Frequencies, Means, and Standard Deviations of Communication Contacts of Pilgrim-sojourners*

Variables  Contacting ...	Frequencies (%)			Means	S.D.	Ns
	1 Never	2 Sometime	3 Often			
1. Co-pilgrims	19.4	21.9	58.8	2.39	.79	434
2. Reception/info. Counter	28.2	37.0	34.7	2.06	.79	432

3. Available Urdu Language Media	53.3	19.7	26.8	1.73	.86	422
4. Saudi National Media	48.5	31.4	20.1	1.72	.78	433
5. Tour Operator/ Agent	67.8	16.2	16	1.48	.76	401
6. Sector In-charge	73.5	19.2	7.3	1.34	.61	427
7. Internet/YouTube	79.9	14.8	5.3	1.25	.54	433
8. Digital Screens	78.8	18.4	2.8	1.24	.49	454
9. Pakistan Hajj Mission Officials	79.8	17.2	3.0	1.23	.49	430
10. Dars Organizers	82.8	13.8	3.5	1.21	.49	429
11. Mu'allim or Agent	85.2	12.8	2.1	1.17	.43	431
12. Saudi Security Officials	91.9	6.2	1.8	1.10	.36	433
13. Saudi Hajj Ministry Officials	98.6	7.0	7.0	1.02	.19	432

Table 5 reports findings on the third objective of the study; i.e., the degree of the pilgrims' satisfaction with the services provided. Fifteen satisfaction items were looked at. Twelve items that pertained to satisfaction with the services provided by the Saudi government and the Hajj authorities were the services provided by: the Saudi government in general, the Mu'allims/their agents, the Saudi immigration services, the security & the law and order agencies, the Saudi health services, the bussing services, the taxi and the private transport, the restaurant services, the cleanliness and hygiene in and around the Haram Shareef, the crowd management, and the housing services. The three items that pertained to the services provided by the Pakistan government and the Hajj authorities were the services of: the Pakistani Hajj mission officials, the tour operators/their agents, the Pakistani health services. The column of figures in Table 5 that informs of the pilgrims' satisfaction with the

various services offered is the column of means. Here we find that on the average the pilgrims tended to feel somewhat satisfied with the services provided by the Saudi government and the Hajj authorities (Mean=3.98, SD=.98) on the 5-point scale ranging from 1 (highly dissatisfied to 5 (highly satisfied with score of 3=neutral).

*Table 5*  
*Frequencies, Means, and Standard Deviations of the level of the Pakistani Pilgrims' Satisfaction with the Services & Facilities during Hajj 1433*

Variables  How much satisfied are you with the ...	Frequencies* (%)					Means	SD	Ns
	1	2	3	4	5			
1. Cleanliness & Hygiene in & around Haram	0.9	2.5	2.1	29.5	65.0	4.55	.74	434
2. Crowd Management Services	5.9	7.0	5.6	35.8	45.7	4.08	1.15	427
3. Saudi government Services	4.4	6.7	2.6	58.8	27.4	3.98	.99	430
4. Guidance & Info. Services	4.1	7.2	8.0	52.2	28.5	3.94	1.01	414
5. Security & Law & Order Services	3.3	6.7	6.9	61.0	22.1	3.92	.92	421
6. Saudi Health Services	3.4	6.6	11.3	52.0	26.8	3.92	.97	381
7. Pakistani Health Services	3.0	14.3	9.3	48.3	25.3	3.79	1.07	400
8. Saudi Immigration Services	6.3	13.4	3.5	56.5	20.4	3.71	1.12	432
9. Mu'allim/Agents	31.3	12.8	20.6	28.2	7.0	2.67	1.36	383

10. Pakistani Mission Officials	7.5	12.9	9.3	47.7	22.7	3.65	1.18	428
11. Housing Facilities	13.4	14.8	5.3	37.9	28.6	3.54	1.39	433
12. Eating & Restaurant Facilities	13.1	13.6	9.2	48.4	15.7	3.40	1.27	426
13. Bussing Services	16.5	15.8	10.0	41.1	16.5	3.25	1.35	399
14. Tour Operators/ Agents	24.1	11.9	14.2	33.8	15.9	3.05	1.44	352
15. Taxi and Private Transport	47.5	24.5	9.3	13.5	5.1	2.04	1.25	408

\*1=Very Dissatisfied, 2=Dissatisfied, 3=Neutral, 4=Satisfied, 5=Very Satisfied

The most amount of satisfaction is respectively evidenced with the services in the areas of cleanliness and hygiene in and around the Haram Shareef (Mean=4.55, SD=.74), the crowd management services (Mean=4.08, SD=1.15), the guidance and information services (Mean=3.94, SD=1.01), the security & law & order and Saudi health services (Mean=3.92, SD=.92; Mean=3.92, SD=.97, respectively). The highest amount of dissatisfaction is registered for the services in the area of taxi and private transport (Mean=2.04, SD=1.25) and the services provided by the Mu'allims/and their agents (Mean=2.67, SD=1.36). 'The mean score of satisfaction with the housing facilities (Mean=3.54, SD=1.39), the bussing services provided by the Muttawafeen (Mean=3.25, SD=1.35), eating and the restaurant facilities (Mean=3.40, SD=1.27) falls between the scores of 3 (feel neutral) & 4 (feel satisfied) denoting low degree of satisfaction.

The pilgrim-sojourners' extent of perceived satisfaction with the services provided by the Pakistani government and Hajj mission authorities does not seem great. The mean scores on all three items of perceived satisfaction with the Pakistani services [Pakistani government and mission officials (Mean=3.65, SD=1.18), tour operators/their agents (Mean=3.05, SD=1.44), and the Pakistani health services (Mean=3.79, SD=1.07)] fall below the satisfaction threshold score of 4. That is, on

the average the pilgrims feel neutral (neither satisfied nor dissatisfied) or at most somewhat satisfied with these services.

Tables 6 & 7 give findings on the study's third objective. This final objective required us to determine the effect of the pilgrims' communication connections in problem situations on the level of their perceived satisfaction with the services provided to them.

Table 6 reports means, standard deviation, and zero-order correlation coefficients of the nine predictors with the two criterion variables of perceived satisfaction with the services provided by the Pakistani and the Saudi government authorities. As evident from this table, age and education had no correlation with satisfaction with the Saudi government services. The Hajj scheme of the pilgrim weakly but negatively correlated with satisfaction with the Saudi government services implying that the pilgrims performing Hajj under the private scheme tended to be dissatisfied with the Saudi services. Age negative correlated with perceived satisfaction with the services of the Pakistani government. Of the six communication contact variables, the variables of communication contacts with the community organizations (a mean of an additive index of contacts with hotel/housing information counters, contacts with Mu'allims/their agents, contacts with tour operators/their agents, contacts with sector-incharge, and contacts with dars organizers in the neighbourhood masjids) and communication contacts with family/friends and co-pilgrims positively correlated with the two criterion variables of satisfaction. That is, those pilgrims who reported greater amount of communication contacts with community organizations and the co-pilgrims were more likely to feel more satisfied with the services provided.

Since the zero-order correlations could be spurious due to the influence of the third variables and since these coefficients do not tell us of the impact of the predictor variables, we performed stepwise multiple regressions. Table 7 reports the results of the regression of the two criterion indices on three demographic control variables of age, education, and the Hajj scheme and the six communication contacts variables. The 3-point scales of the four predictors of contacts with mediated sources; viz, the Saudi mass media, the ethnic or the Urdu language newspapers, the Internet/YouTube, and the digital screens were all dichotomized at the median into two groups (those who never contacted the source and those who contacted the source). This

collapsing was done due to evidence of very strong positive skew and for other distributional reasons necessitating a logical collapsing of the categories (cf. Table 4).

*Table 6*  
*Means, Standard Deviations, and Zero-Order Correlations of Satisfaction Variables with Demographic, and Communication Contact Variables*

Predictors	Means (SD)	Criterion Variables Satisfaction With	
		Saudi Government Services (Mean=3.38, SD=.69) N=285 r	Pakistani Government Services (Mean=3.5, SD=.81) N=288 r
Age	44.87 (11.94)	-.05	-.12
Education	3.12	-.07	.03
Hajj Scheme (private scheme=2)	(1.28) 1.40 (.49)	-.10	-.01
Communication with:		.21	.18
Community org.		.18	.12
Family/co- pilgrims	1.39 (.30)	-.08 -.04	-.05 .08
Urdu language media	2.34 (.82)	-.09 -.04	-.02 .05
Internet/ YouTube	1.80 (.89)		
Digital Screens	1.67 (.78)		
Saudi Media	1.22 (.48)		
	1.28 (.55)		

*Note: coefficients of .10 are significant at  $p < .05$ .*

Table 7 reports results of the final step in the stepwise multiple regressions of the two criterion variables on nine predictors. As evident from the table, after controlling for the effects of other predictors, we found statistically significant effects of communication contacts with the community organizations, the family/friends & co-pilgrims, the ethnic media (the Urdu language newspaper), and the digital screens on satisfaction with the services provided by the Saudi government and the Hajj authorities. Nevertheless, the direction of impact is of these four communication contact predictors is interesting. The table shows that whereas the increased communication contacts with community organizations and co-pilgrims leads to greater feeling of satisfaction with the Saudi government services, the communication contacts with the ethnic media (the Urdu newspaper here) and the digital screens led to decreased satisfaction with the quality of services provided.

Specifically, one standard deviation unit increase in contact with community organization leads to .27 standard deviation unit increase in satisfaction. This translates into something as .08 units increase in the pilgrims' satisfaction ( $.27 \times .30 = .08$ ). Similarly, one standard deviation unit increase in contacts with family/friends and co-pilgrims leads to .17 SD unit increase in satisfaction, which is .14 units ( $.17 \times .82 = .14$ ). Communication contacts with the Urdu language (ethnic) newspaper and the digital screens negatively impacted upon the satisfaction levels after the effects of all other predictors in the model are controlled for. That is, a pilgrim who uses the Urdu language newspaper becomes .21 units ( $.23 \times .89 = .21$ ) less satisfied with the services provided by the Saudi government authorities. Similarly, a pilgrim who uses the digital screens becomes .07 units ( $.15 \times .48 = .07$ ) less satisfied with the Saudi services.

*Table 7*  
*Stepwise Multiple Regression of the Pilgrims' Satisfaction Variables on*  
*Demographic and Communication Contact Variables*

Predictors	Final Step Betas*	
	Satisfaction with Saudi Services (N=285)	Satisfaction with Pakistani Services (N=288)
Constant**	2.4	2.6
Age		
Education	.27	.28
Hajj Scheme		
Contacts community organizations	.17 -.23	
Contacts co-pilgrims	-.15	
Contacts ethnic media		
Contacts Internet		
Contacts digital screens		
Contacts Saudi media		
R <sup>2</sup> %	11.6	6.4
Adjusted R <sup>2</sup> %	10.3	5.8

Note: \*Coefficients are significant at  $p < .01$

\*\*Figures for the constant are unstandardized partial regression coefficients.

In the case of satisfaction with the Pakistani government services, only two predictors; viz, communication contacts with community organizations and contacts with the Urdu language newspaper produced statistically significant effects. Here too, the increased contact with the Urdu language newspaper is found producing decreased levels of satisfaction with the services. Specifically, after controlling for the effects of all other predictors, an increase of 1 SD unit in contact with community organizations leads to .28 SD unit; i.e., .08 unit (.28

x .30=.08), increase in the level of satisfaction. On the other hand, a pilgrim who uses the Urdu language (ethnic) newspaper becomes .18 units (.20 x .89=.18) less satisfied with the services offered by the Pakistani Hajj authorities

An analysis of the case wise diagnostics and the standardized residuals indicated that the errors in the models were within the acceptable limits. Less than one percent of the standardized residuals had values more than 2.58. The Cook's distance statistics and the leverage values were less than one and close to zeros. Hence the models fitted the data quite well. As for the generalizability of the models, the adjusted  $R^2$  values were compared with the  $R^2$  values for shrinkage. The adjusted  $R^2$  values minimally differed from the unadjusted  $R^2$  values in both the models (cf. Table 7). Additionally, the linearity and the homoscedasticity assumptions were respectively examined through the P-P plot of the standardized residuals and the scatterplot of the regression of standardized residuals on the standardized predicted values. The visual inspections did not seem to support violation of these assumptions. The values of the Durbin-Watson statistics of both the models were close to two and in no case were less than 1 or more than 3 and thus supportive of the independence of errors assumption as well. The VIF values ranged between 1 and 2 and all were well below 2 and hence did not give any cause for concern for multicollinearity. In sum all these parameters indicated that both the models not only fitted the observed data well but also were safely generalizable to other samples from the same population.

## Discussion

Four aspects of the pilgrims' communication ecology were looked at. Top five ranks of the two most important sources of communication contacts (comprising over 82% of the 715 responses) respectively belonged to the family/friends & co-pilgrims (a micro-individual source), the housing reception/information counters (a meso-level community organization source), the Urdu-language newspaper (an ethnic media source), the Saudi mainstream mass media (a macro-level societal source), the contacts with tour operators (a meso-level community organization source) tied with the communication contacts with the Pakistan Hajj mission officials (a meso-level community organization source). In terms of the intensity of the contacts, the rank

order of the sources respectively was: family/friends & co-pilgrims, the tour operators, the information/reception counters, the Urdu language newspaper, and the Saudi national media. Clearly, the interpersonal contacts with micro-individual and the community organizational sources were predominant and more intense than the mass mediated sources in the communication ecology.

As regards the pilgrim-sojourners degree of satisfaction with the services provided, on average most satisfaction was registered for the cleanliness & hygiene services in and around the Haram Shareef followed by the crowd management services and the Saudi government services in general such as the guidance and the information services, the security & law and order and the Saudi health services. The pilgrims tended to be less than satisfied with the Pakistan Hajj mission officials and health services. On average, dissatisfaction may be said to have been expressed for the private transport service and the services offered by the Mu'allims and their agents. The pilgrims tended to feel neutral, (neither satisfied nor dissatisfied), about the services offered by the tour operators.

In terms of the impact of communication contacts on the pilgrims' satisfaction with the services of the Saudi and the Pakistani Hajj mission authorities, contacts with community organization and co-pilgrims had a positive effect on the level of satisfaction with the Saudi services after the effects of the rest of the eight predictors (age, education, the Hajj scheme, the contacts with the co-pilgrims, the contacts with the Internet, the Urdu language newspaper, the digital screens, and the Saudi national mass media) were accounted for. The contacts with the Urdu language newspapers and the digital screens, however, impacted negatively on the pilgrims' levels of satisfaction. As for the satisfaction with the services provided by the Pakistani government authorities, it was found that only the contacts with the community organizations and the contacts with the Urdu (ethnic) language newspaper had statistically significant effect. The contacts with community organization had a positive and the Urdu language newspaper had a negative effect on satisfaction with the Pakistani services after the effects of all the other predictors were controlled for.

The study did not examine as to why the digital screens and the Urdu language newspapers were producing negative impact on the

satisfaction levels. One may easily speculate, though, that it may be due to the nature of the contents in the two mediated channels. Nevertheless, the possibility of the contents critical of the government services on the digital billboards (largely a public service announcement tool) is out of question. Similarly, in the absence of any content analysis of the Urdu language local newspaper, any inference about the Hajj coverage being negative might be largely out of place. It may well be likely that the coverage in the newspaper was unhelpful to the pilgrims in resolving their immediate problems. And this frustration with the newspaper might be undermining their satisfaction with the overall services being provided. But, of course, an examination into the nature and the relevance of the content would be needed before any conclusion can be drawn. Our previous study about the uses and the effects of the digital billboards has shown that the Pakistani pilgrims failed to benefit from the billboard messages despite using the screens due to the language barriers and such message display factors like the crowded text, the scrolling speed of the text, the type-size of the text, and the irrelevance of the text to the practical needs of the pilgrims. Hence the resultant dissatisfaction of the pilgrims with the practical utility of the billboards screens in catering to their everyday problem-solving needs might also be getting projected on to their level of satisfaction with the services provided.

For communication with the pilgrim-sojourners and for the diffusion of relevant and practical information to them, the findings imply greater reliance on such community organization resources like the reception and information counters, tour operators, and the Hajj mission officials, the dars organizers in the neighbourhood mosques. Community organizations and interpersonal resources seem to hold greater promise and can be more efficiently deployed for message communication and for improving the overall satisfaction of the pilgrims.

The mediated channels are either having no effect as evident from the lack of any impact of the Saudi mainstream media on the satisfaction levels of the pilgrims or as in the case of the ethnic newspaper and the digital screens might be undermining satisfaction of the pilgrims. Perhaps, the quality of information and the text display (in the case of the digital billboards) needs to be improved. Hence the findings

underscore the need to examine the content of the ethnic newspapers (the Urdu language newspapers) and the digital screens.

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### (Endnotes)

- <sup>1</sup> The record for constructing the sampling-frames for each stratum came from the South Asian Pilgrims' Establishment office based in the Al-Rusaifa District at Makkah Al-Mukarramah. This was an elaborate record that, *inter alia*, contained information about the type of Hajj scheme used by the pilgrims, building addresses, the Maktab number of the pilgrims in a building, and the size of the building indicated by the number of pilgrims in each building. Some additional information on the addresses and the spread of the buildings inside the city for the pilgrims under the government scheme was obtained from the Pakistan Hajj Mission Office at Makkah Al-Mukarramah.
- <sup>2</sup> A code definition sheet and coding scheme for the open-ended questions on the pilgrims' problem-related communication connection was also created by the authors and two trained coders. All the responses were coded as micro-individual (interpersonal) contacts with the co-pilgrims, family or friends, the contacts with community organizations like the dars organizers, mualams, sector incharge and information counters, and the contacts with the local and the mainstream media, and the online media. Inter-coder agreement in coding the pretest data on communication connection was over 95 percent.
- <sup>3</sup> This was necessitated due to very strong positive skew with 1 being the modal as well as the median category as in the case of digital screens, the Internet use, and the ethnic newspaper or the modal and almost the median category as in the case of the use of Saudi mass media (cf. Table 4).