

Impact of Internet on African Female Social Behaviour: Issues Raised By Online Dating Sites

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Abstract

Information technology has potential to raise the profile and standards of living of the average human being. Although the impact of information technology (ICT) can be felt easily by most people measuring and quantifying it is harder. This paper measures the impact of Internet on African female sexuality in the context of usage of online dating sites and the demographic differences between the young and older generation. The paper also reports on the changing attitudes of the average African female locally and in the Diasporas. We measured the participation of African female in an online dating site. One of the three sites is dedicated to dating black men and women and the other two are mixed. The level of participation per age is measured and the attitudes manifested in this paper by female participants were recorded based on dating arrangements between the experimenters and individuals met online. The results indicate that online dating is prevalent among African educated females with changing attitudes. It indicates willingness to first approach, first request dates and also seek permanent relationships. Results also show that online dating has potential to seduce and also reduce the value attached to partners. It also shows that for both sexes many are willing to engage in web sex usually within hours of meeting the person online. It also shows that dating sites are being used legally to find partners and also illegally to solicit Internet crimes such as advance fee fraud. The study reveals that there are no policy guidelines or regulation of Internet dating sites by any African country. There is no parental control.

Introduction

The impact of information communication technology is generally hard to measure as it is dispersed over many factors that affect society, life styles, economy, social behaviour, longevity and wealth creation. The traditional African woman is conservative (or so we are made to believe) in terms of being pro-active to search for a life-time partner. As an African female expatriate puts it, *"My picture is not on this site because I am embarrassed to be seen by people who know me. An African woman does not go about looking for men does she?"* *Stephie*. There are however changing trends as this paper reveals. The educated African woman or man has changed and it appears the cultural African society is lagging behind. This change is in the application of ICT, specifically the Internet in networking and solving social issues. To the author's knowledge, there is no quantifiable study done yet on the effects of the Internet on the social behaviour of the African. There are however key papers that seek to address the impact of ICT in the African context. Beebe [3] reports the impact of ICT revolution on the African academic landscape as a trans-national collaboration and distance education [1]. This impact is well known.

Current literature reveals there is significant description of the impact of ICT on sections of the African society including education [4], productivity [4] and the delivery of HIV/AIDS. There is however no quantifiable means that permits repeatable experimentation or data correlation across several demographical regions. Recently there were attempts to quantify the impact of ICT on the economies of African countries using the gross domestic product of several communities by Yang and Agbinya [4] based on the penetration of telephone and mobile phones. They provided a model that uses the percentage contribution p (%) of telecommunications to productivity in an area and showed that it is related to the gross domestic product (GDP) g , of the area. The following expression models this relationship [4]:

$$p = x_1 \times g + x_2 \times g^2; \quad (1)$$

$$0.2 \leq x_1 \leq 0.3; \quad 0.02 \leq x_2 \leq 0.03$$

The GDP g of the area is in 1000s of dollars. The variables x_1 and x_2 come from the telephone penetration of the area and are 0.3 and 0.03 respectively for low penetration rates. In [2] the impact of the spread of ICT on changes in lifestyle was discussed using a so-called microscopic model. The authors concluded that ICT has the potential to reduce energy consumption, save money and increase leisure time. It is however impossible to repeat this work as no empirical measure was given and no metric was provided.

Studies on the social impact of ICT on African men, women and on its youths and economies are however very rare. This paper lays a foundation and is an attempt to study the impact of ICT on the sexual and social behaviour of African women as exposed through online dating sites. The rest of the paper is organised as follows. Section 2 is a description of online dating with specific emphasis on African women. The social and gender issues are raised. Section 3 provides a site study based on a chosen dating site. The method used for data measurements, analysis and evaluation of the impact is given in section 4. this is in terms of the level of participation per country. A mathematical model is given in section 5. The model fits the statistics of dating site access by African female partner seekers. Conclusions are drawn in section 6.

Impact of Online Dating: The African Context

Online dating sites although new to most regions of the world have emerged as a major meeting point for single men, women and in some cases married people as well. Online dating sites provide social introductions for its customers through arranging avenues for contacts to be made using email, chat or instant messaging in various forms. Most sites provide teasers and what they term “winking” at the opponent. Table 1 is a snapshot of some of the terms to be found from several sites:

Phrase	Examples	Site
Icebreaker	<ul style="list-style-type: none"> Your profile made me smile You caught my eye Your profile stood out from the rest If you e-mail me, I'll definitely respond Nice photo, can you add more? Your profile shows we share some interests Want to chat? On my profile I've got some great questions to start Thanks for viewing my profile. Would you like to chat? 	yahoo
Teaser	<ul style="list-style-type: none"> I would regret not writing to someone so intriguing. Let us exchange some e-mails while I woke up the courage to ask you out. They say you should marry someone you love to talk to. Why do we not get started? Can I write to you sometimes? I am looking for a relationship, are you? 	orkut
Romantic	<ul style="list-style-type: none"> Give me the chance to be crazy about you. You have the beauty that myths are about. Judging your book by its cover, I would love to curl up and read the rest. We may be far apart... but our hearts could be so close. Do you not agree? If I were stranded on a desert island, I would not need three things, I would just take you. 	orkut
Humorous	<ul style="list-style-type: none"> Hello. Okay, I said something. Your turn. My future self wants to thank you for an amazing evening. My present self is waiting for you to say yes. This is a test of the emergency dating system. Do you want to meet? This is only a date. I am getting a little intrigued... tell me about yourself... I will give you a topic...the Holy Roman Empire was neither holy nor Roman nor an empire. Discuss. If this works out... let us make a pact to tell our friends we met at the supermarket. 	orkut

Table 1: Teasers and Icebreakers in Online Dating

One of the major attractions of dating sites is the anonymity that it presents as an encouragement for people to break their cultural norms and taboos and to cross their social

boundaries. To encourage this, most lists provide the options to add people to a crush list, hot list, bookmark, ignore and block lists. Some sites provide the option of receiving and reading emails sent by subscribers to you at the site (some of the sites require that you are a paid member to gain access to such emails). Instead the site administrators would alert you to the presence of a new email from someone interested in you. Most sites also provide for each subscriber to have a list of favourites, matches, interest list, who is interested, online friends, who is online and who is new. They also provide chat, receive and send email or instant messaging. In the search categories, users can search by age, religion, sex, by interest, by country and in some countries by provinces or local government councils. Other search options include the interests of the partner to be. In most cases, subscribers are required to choose whether their general interests for belonging to the site is pen pal, friendship, romance/dating, relationship, marriage and networking. Many sites provide for advance searching options as well. This includes searching by the fields in the profiles of the subscribers. Users have profiles and may upload their photo on with their profiles. A typical profile of a user looks like:

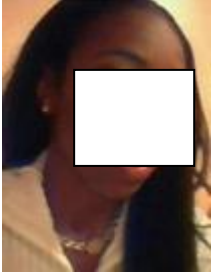
A Member Overview	
	
<p>I am emotional and passionate, open and kind, very serious about life. I have great sense of humor and I adore smiling. I am a good hostess, kind and communicable person, with good sense of humor, but have serious attitude to life, very vulnerable, also I am reliable, responsible and careful. I do not use make up, I always prefer natural beauty. I like sun, the sea and the beach. In the future I would like to have 2 children (a boy and a girl). I have a lot of interests. The first of all I like music (to dance, to sing), to travel, fast ride in car, so I study to drive. The second that I like to do is to study, visit libraries, walking, go to the restaurant, to museum and, of course, as all women, like to do shopping and love taking picture of myself.</p>	
<p>Gender: Female Age: 30 Marital Status: Single Has Children: No Lives in: warri, delta state, Nigeria Nationality: Nigeria Appearance: Attractive Height: 168 cm (5 ft 6 in) Weight: 54 Kg (119 lb) Hair Color: Black Eye Color: Brown Ethnicity: African (Black) Religion: Christian - Catholic Star Sign: Cancer Education: Bachelors degree Occupation: secretary Languages spoken: English English Ability: Fluent Smoking: No Drinking: Yes Relocate: Yes Last active: 06-Nov-06</p>	
<p>Seeking I'm looking for a real man, a real gentleman who knows how to treat a real lady like me, who is not afraid to have a beautiful young wife close to him and who will appreciate such kinds as loyalty and will be ready to give it in return. I would like him to be strong physically and emotionally, who would like to create strong family bond, a real good team together.</p> <p>Gender: Male Aged: 30-55 For: Penpal Friend Relationship Marriage</p>	

Table 2: Example of Online Dating Profile

Many sites seek approval of profiles and their modifications before they appear to the public. Profiles may be hidden or kept private. The sites are able to show presence or if the person of interest is online and how many subscribers are online.

As a norm dating sites provide limited access permissions for payment-free members and more benefits for paid members. Most dating sites surveyed give membership identity numbers, record members email addresses, forward members dating interest to others and also capture profiles of its members in terms of their needs and wants. They also provide through the profiles the types of dates being sought. There are thousands of online dating sites and during this study a conscious decision was made to focus on a select three which was subsequently narrowed down to one – a site that specialises in providing dating opportunities for black men and women. Generally, the issues raised in one site manifest in others as well. Therefore limiting the study to a focused site is essential.

Experimental Set Up

An African dating site was chosen. It provides avenues for Africans and non-Africans with interests in dating – black with black, black with white and with other races with interests in dating black men and women. The site therefore has members from most European and African countries including the USA, Canada, Australia and New Zealand (although these are in minority).

The author registered anonymously with a pseudonym and focused on studying only the female gender who either contacted him or he contacted them. The experiments initially required sending interests and hoping the prospect was willing to exchange information and chat. Furthermore, it was decided after a few weeks of experimentation that it was more profitable to study the demographic spread of those online and the countries they come from. Based on the levels of online activity, the authors chose particular African countries including Botswana, Nigeria, Zimbabwe, Liberia, Ghana, Ivory Coast, Senegal, South Africa, Kenya, Morocco, Tanzania, Eritrea, Ethiopia, Rwanda and Australia. Australia was included for comparison with what obtains in a typical western country.

The online site chosen allows anyone from the age of 18 and above to subscribe to the site. It also categorises members as Standard, Gold and Platinum. The standard members can view the profiles of all members and only a limited number of pictures per day. They can express interests in others and send such interests through the online dating administration at the back end. They are also permitted to create databases of those they are interested in. Replies are forwarded by the site to its members. Standard members are however unable to read e-mails from other standard members. Gold members have full access and are able to do all that Standard members can in addition to being able to send and read emails from other members. Gold members are not limited in terms of the number of profiles they can view.

Characteristics of Online Dating Profiles

A dating profile is a self-written document which gives the bio-data, sexual orientation and the dating interests of an online dating subject. Most profiles are less than a page long. Profiles although expected to be genuine reflections of the online person are in most cases written to shield identities. This is not a norm, but rather a choice in many online transactions, done to for protection of identities. Many profiles therefore contain false information, false identities, false age, false names, false countries, false locations (cities) and false educational backgrounds. More correct identities are revealed during chatting sessions and/or email exchanges. Chats therefore would reveal people tell you they are in one country and city and very quickly you find they are actually telling you they are in a different country and city without really giving reasons or being upfront about it. In one instance the following dialogue was recorded:

“I am from Cape Town
I came here to Ghana yesterday”;
Where do you work in Ghana?
“in an orphanage” and I have 500 kids to look after

Some of the respondents are willing to send you kinky photos that point you to other kinky sites where more of their photos are used for soliciting. It is not uncommon for some members to ask that your web cam be turned on and in some instances demand web sex.

Usually in less than three questions after meeting you, they want to know about your marital status, whether you have children, what work you do and whether you live in your own house. The age range for the profiles is from 18 to 65 years. Many respondents are high school graduates, have vocational education, diploma, undergraduates and a few post graduates. Most respondents are hair dressers, pointing to a fact that either they are unemployed or that hair dressing is a popular profession that one could be engaged in.

Most Ghanaian women speak Afrikaans as in Afrikaans in South Africa even when we know they speak some Ghanaian language. Often this is a revelation of ignorance and education level even when they have indicated they have a degree or two. As check it helps to look at this field in addition to where they locate the city they come from in Africa. If Accra is located in Kenya, it is almost certain this person is not yet telling you the truth about herself and this occurs too often.

From the sites studied, participation per time varies per region. Usually the sites are heavily used in the evenings until about 10pm and the number of subscribers reported present then drops significantly. Weekends are usually busier than weekdays. During the busy hour the sites are noisy with chat sessions and very slow as well. It is not uncommon to experience significant flirting from the customers. Most solicit for quick gifts often within a few minutes of being introduced to someone. Popular requests include cell phones, computers, money and promise to relocate them by discussing how you intend for them to see and meet with you. Some request for air tickets and money for school fees.

Most are quick to zero in on their desire for relationship, to be assured that they are loved and in significant numbers of contacts they are also quick to be assured that you want to marry them, all within an hour of knowing the person. Most members want to transfer the chat sessions to yahoo messenger and off the site, probably to avoid the congestion in the site or for privacy reasons.

Data Collection

We recorded for each age (18 to 65 years) the numbers per age looking for marriage (husbands), boyfriends, relationship and pen pals. This was repeated for each country studied. We used the search features provided by the site. A maximum of 1000 different profiles per age is returned by each site and anything above that is clipped by the site. Therefore for some of the countries (Ghana, Nigeria and Kenya) where the numbers exceed 1000, they are clipped to 1000. Table 1 is a record of the statistics gathered.

Participation per Country and Profile

The next sets of figures show the profile of participation per country. The highest number of participation number is from Kenya and the least from Eritrea. Perhaps this is an indicator of the level of female education in these countries or a cultural adherence/shift as well. Or it is also an indication of the disposable income for these women to deploy in paying for Internet access and also the level of access available to them.

Participation per age

The average number of females searching for partners per age is shown in Figure 2. This average is taken across all the countries studied and all the ages seen. This figure shows the average across 13 African countries from age 18 to 65. The figure manifests a cluster of participation peaks from the age 20 to 30 years in most African countries. During this age gap there is a high activity and significant use of the Internet to search for partners. At any point in time, there are more 25 year olds searching than any other age group. At the age of about 32, most have married or given up searching for partners, manifesting as a dip in the graph. From then on, there phases in the search as shown at the age of 35 years, 40 years and 45 years. For all ages, there appears to be renewed search for partners as manifested by the peaks. This trend occurs in nearly all the African countries studied. The figure also reveals that the African woman is no more waiting for their men to take the lead in searching for them, a traditional norm being broken in all African countries. Rather, there is a significant shift towards women taking the initiative.

Nigeria	Ghana	South Africa	Kenya	Botswana	Ivory Coast	senegal	Tanzania
642	506	59	364	14	236	200	55
706	412	58	485	19	222	124	34
1000	1000	85	927	23	347	182	53
1000	1000	133	1000	37	386	172	79
1000	1000	105	1000	40	549	240	105
1000	1000	133	1000	39	664	344	129
1000	1000	157	1000	49	730	269	108
1000	1000	212	1000	42	958	337	137
1000	1000	147	1000	41	775	239	127
1000	1000	137	1000	39	630	246	102
1000	1000	160	1000	33	631	204	84
922	1000	162	964	33	440	160	68
965	1000	258	1000	33	488	202	84
290	324	81	545	24	217	84	31
354	323	94	649	24	183	97	43
225	156	74	465	24	160	51	25
184	127	38	452	20	115	51	21
213	289	55	478	18	137	40	32
106	107	41	369	19	82	29	20
93	81	40	291	20	72	29	15
87	90	29	300	12	71	33	18
52	68	29	220	13	40	23	12
62	80	33	308	12	62	35	20
25	28	15	214	10	33	13	5
40	41	25	165	9	42	11	8
28	24	18	123	3	24	9	8
28	26	13	95	7	17	9	1
34	37	22	140	4	30	20	11
9	16	9	55	5	20	5	4
13	10	10	49	6	16	6	6
10	9	11	50	2	21	7	3
11	11	10	48	0	20	5	1
8	6	13	50	0	15	6	6
6	7	4	21	0	8	2	2
10	2	3	15	1	9	3	1
4	3	3	14	1	3	0	1
7	1	2	11	0	0	1	1
1	5	0	16	1	3	1	2
0	0	3	5	0	2	0	0
0	0	3	6	2	0	0	0
0	0	0	5	0	0	0	0
0	0	0	5	0	1	1	0
0	0	0	2	0	1	0	0
0	0	0	1	0	0	0	2
0	0	0	1	0	0	0	1

Table 3: Participation Statistics per Age and Country

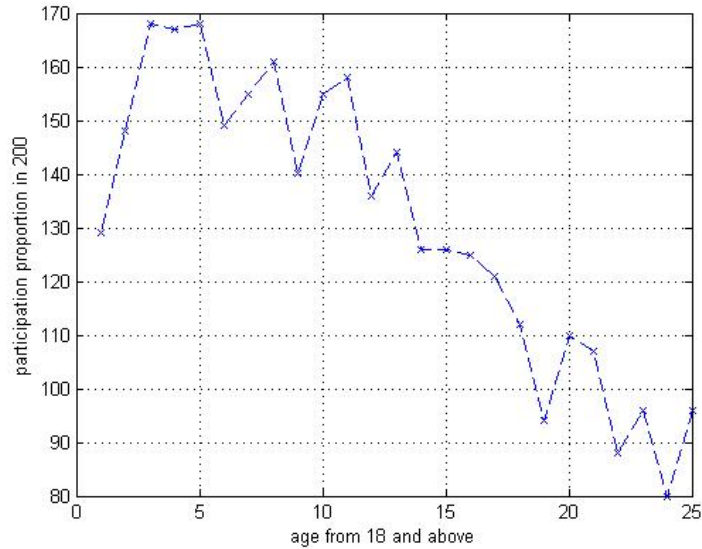


Figure 1: Participation Rate out of 200 random samples

We performed statistical analysis of the data in Table 3, to determine the distributions and the mathematical models which best fit the data in terms of cumulative distributions and probability density functions.

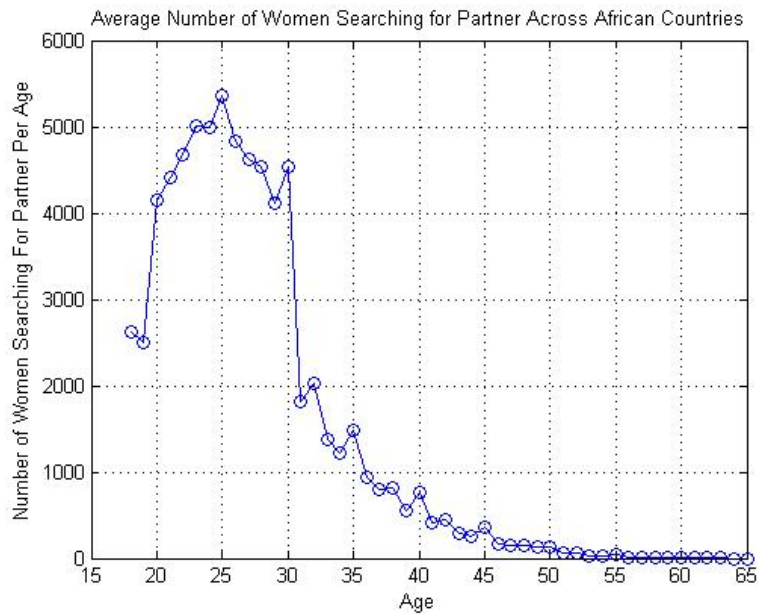


Figure 2: Cumulative Participation Per Age

The cumulative distribution of the data in Table 3 is given in Figure 3. The sum of rows is used as a vector to describe the profile of age participation across all marriageable ages and across the continent. This data is used as input to compute the cumulative distribution in Figure 3.

As an objective of the research reported in this paper, we sought to provide an estimate of the probability density functions of the data in Table 3. The data was matched across several well known density functions with the best fit given by the Rayleigh probability density function. Figure 4 confirms the shape of Figure 3 as it indicates that the shape of the Figure is determined by the variance of the distribution and hence will vary from country to country.

The shape of Figure 3 suggests that it can be represented as either Rayleigh, Weibull or χ functions. Rayleigh functions have cumulative distribution functions given by the expression:

$$F(x, \mu, \sigma) = 1 - e^{-\frac{1}{2} \left(\frac{x-\mu}{\sigma} \right)^2} \quad (3)$$

The Rayleigh function is a special case of the χ function with degrees of freedom parameter = 3 and also the Weibull function with shape parameter = 2 and scale parameter = $\sqrt{2}\sigma$.

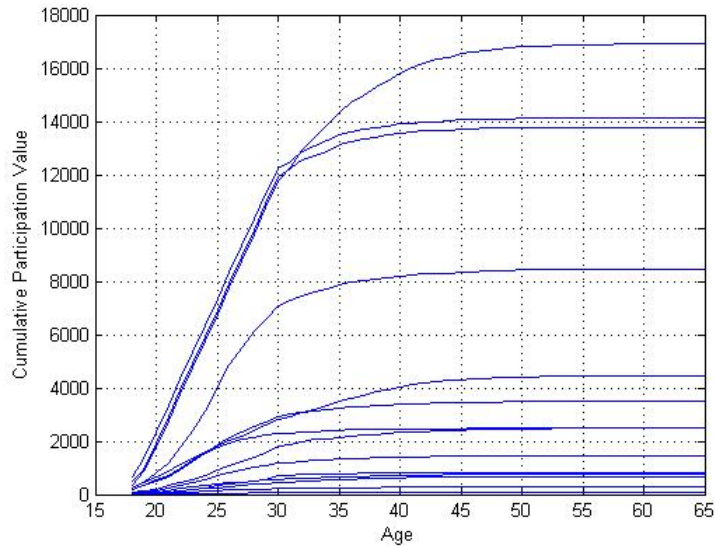


Figure 3: Cumulative Distribution (Rayleigh / Nakagami-m) Function of data

This figure manifests four groups of participation. In the first group, the cumulative distribution is from zero to 2000 [(Eritrea (45), Rwanda (278), Botswana (679), Zimbabwe (771), Liberia (828) and Tanzania (1465)). The second group has participation from 2000 to 4000 we have [Tanzania (1465), Ethiopia (2480), South Africa (2484) and Senegal (3490)]. The third group has participation level from 4, 000 to 8000 [Morocco (4444)]. The fourth group includes [Ivory Coast (8461), Ghana (13789), Nigeria (14135) and Kenya (16908)] with participation levels from 8 000 to 17000.

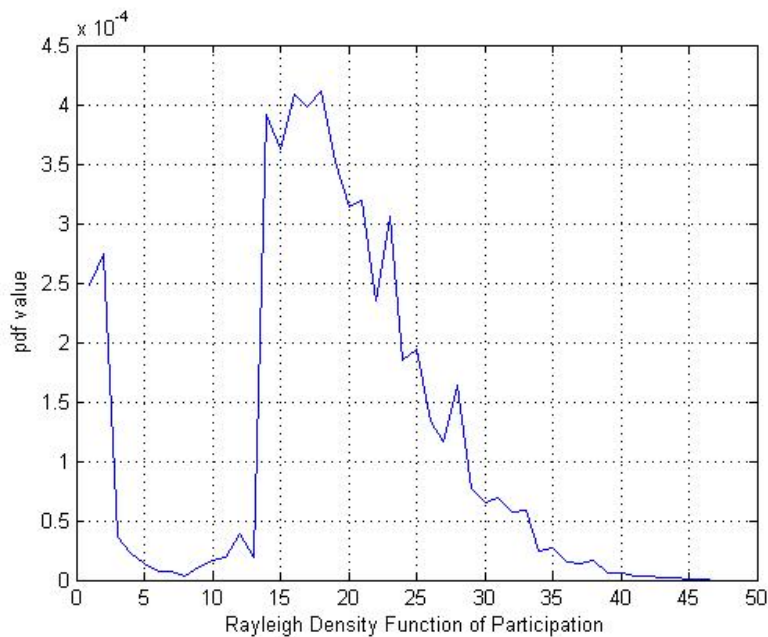


Figure 4: Rayleigh Density Function Estimate of Participation

The model shown in Figure 4 can therefore be described with a Rayleigh density function given as the expression:

$$g(x|\sigma) = \frac{x \exp\left(\frac{-x^2}{2\sigma^2}\right)}{\sigma^2} \quad (2)$$

Where x is the variable (here, female participation) and σ^2 is the variance of the data. The mean for the data in Figure 4 is 1476.5 and the variance is 1874.3.

The Rayleigh function best describes the global behaviour when all countries are taken together. Unfortunately this is not absolutely correct to think that the search performance for all countries is the same (see Figure 3). The process is multivariate and from observation, the peak age for participation varies from country to country and the tail of the distribution also changes. It is therefore impractical to expect the same nature and level of participation in all countries. Hence the optimal statistical representation is a multivariate distribution. Hence, the best probability density function is the Nakagami- m density function (multiple Rayleigh functions, with each representing the statistical participation in that country). The Nakagami- m density function is given by the expression:

$$g(x) = \frac{2m^m x^{2m-1} e^{-(m/\Omega)x^2}}{\Gamma(m)\Omega^m} \quad (4)$$

Where $\Gamma(\bullet)$ is a Gamma function, $\Omega = \bar{x}^2/m$ and $m \geq 1/2$ is the inverse normalised variance, (\bar{x}^2) .

Effects of Internet Access Rate on Participation

Over the last eight years, Internet penetration in Africa has increased by about 975%. This huge increase in ICT availability and access is also reflected in the changing attitudes to social issues and in this case on the search for marriage partners.

INTERNET USAGE STATISTICS FOR SOME AFRICAN COUNTRIES							
AFRICA	Population (2007 Est.)	Internet Users Dec-00	Internet Users, Latest Data	Dating Site Participation	% of Country Population	% of Internet Users	% Population (Penetration)
Botswana	1,893,526	15,000	60,000	679	0.035859	1.131667	3.20%
Cote d'Ivoire	20,169,352	40,000	300,000	8,461	0.041950	2.820333	1.50%
Eritrea	4,254,498	5,000	100,000	45	0.001058	0.045000	2.40%
Ethiopia	73,872,056	10,000	164,000	2,480	0.003357	1.512195	0.20%
Ghana	21,801,662	30,000	609,800	13,789	0.063247	2.753198	2.80%
Kenya	35,062,192	200,000	2,770,300	16,908	0.048223	0.610331	7.90%
Liberia	3,146,406	500	1,000	828	0.026316	82.800000	0.03%
Morocco	30,534,870	100,000	6,100,000	4,444	0.014554	0.072852	20.00%
Nigeria	162,082,868	200,000	8,000,000	14,135	0.008721	0.176688	4.90%
Rwanda	8,959,095	5,000	65,000	278	0.003103	0.427692	0.70%
Senegal	11,069,755	40,000	650,000	3,490	0.031527	0.536923	5.90%
South Africa	49,660,502	2,400,000	5,100,000	2,484	0.005002	0.048706	10.30%
Tanzania	38,870,348	115,000	384,300	1,465	0.003769	0.381213	1.00%
Zimbabwe	12,398,897	50,000	1,220,000	2,480	0.020002	0.203279	9.80%
TOTAL AFRICA	933,448,292	4,514,400	43,995,700	71,966	0.007710	0.163575	4.70%

Table 4: Participation as a Percentage of Internet Users in Each Country

Using the Internet data in [5], the following table is prepared. Columns 1-4 and 8 were obtained from [5] and columns 5, 6 and 7 are created from this study. When we match the cumulative distribution per country with the Internet access penetration for the country, four clusters of participation are observed. Group 1 shows the lowest rate of participation occurring in South Africa, Eritrea and Morocco. The participation in this group is clearly below

the continental average. Group 2 represents an average continental participation and is recorded in Nigeria and Zimbabwe. The third group of participation is above the continental average, occurring in Kenya, Senegal, Rwanda and Tanzania. The fourth group is a very high participation rate which takes place in Ivory Coast, Ghana, Ethiopia and Botswana. This level of participation does not correlate with the amount of disposable income and also not with the level of education. It appears to reflect a cultural shift towards assertive female participants in searching for partners. While this also might be a pointer to a higher level of unmarried women in those countries, the author is yet to prove that this indeed is the case. What is happening in both cluster 3 and 4 appears to be a manifestation of sexual or attitudinal change.

Discussions and Conclusions

Statistically, the process is multivariate. Although we can capture what is happening in each country as a Rayleigh process, continentally, a multivariate process with different means and variance is required.

Many trends can be observed from the online dating data. African women are ready and are approaching their male interests first, breaking the traditional taboo and norm. Many of them use different photos as a front, often a very good photo or a photo that is completely different from how they look naturally. In a few cases, individuals used multiple profiles with different photos and different identities. There are also numerous complaints from the female prospects that most of the male counterparts met online "are not serious" and that "all they want is sex". They also express the feelings that the male counterparts are deceitful, not trustworthy and some have gone as far as putting embargo on males from certain countries. It is also observed that once they have a good chat with someone, they become attached strongly too fast. Many of the respondents have multiple online dating partners.

It became obvious during the course of the study that the site studied has been infiltrated and is being used for Internet crime, specifically advance fee fraud. In three cases which the author ran into, there were male prospects at the backend and they use photos of very pretty women as front end to catch the attention of unsuspecting males. In two of the three instances the photos used were for white females which they claim were born to African males by white wives. For all the three cases, they asked for money, for tickets and in one case pretended to be in trouble in a certain country and that the male prospect should send money to bail them out because they were stranded in that country during the course of visiting a suitor.

Some of the most revealing conclusions are that the cultural African norm of having family members or friends and relatives undertake the match-making exercise on behalf of their daughters and relatives is being broken strongly. This is being replaced by personal search and a desire to have someone they really love as their preferred choice. It points to the fact that they are also willing to make that choice despite objections from parents. It is also evident that their parents (mum and dad) are not online, but they are in large numbers and this is often unsupervised. It also emerged that more and more of them are investing money and time in searching for their soul mates.

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