

MEASURING POVERTY FROM EXPENDITURE VIEW: AN ANALYSIS OF ZAKAT RECIPIENTS AMONG POOR AND NEEDY IN KELANTAN, MALAYSIA (PENGUKURAN TAHAP KEMISKINAN DARI ASPEK PERBELANJAAN: ANALISIS DALAM KALANGAN PENERIMA ZAKAT DI KELANTAN, MALAYSIA)

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Abstract: The effects of zakat distribution on poverty are analysed within the context of burden of poverty; specifically in terms of incidence, intensity and severity of poverty. These are examined using three major indices of poverty, which include the Headcount Index, Poverty Gap Index and Sen Index. The findings show that the poor and needy have higher poverty measures based on expenditure compare to income poverty measures. Poverty incidences are higher in the rural areas. All methods identify the poorest gender household head is rural female. From the results, it is noted that poverty is prevalent among the households with female household's head who live in rural area. Besides that, the results of this study show that the extent of poverty can be high in low poverty incidence area. This suggests that poverty should be measured based on expenditure method which reflect on their poverty conditions. Results of this article is important for policy implications for Kelantan Zakat Department in making the zakat distribution more efficient and uplift the important role of zakat as one of the poverty alleviation tools among the Muslims.

Keywords: Expenditure, Zakat, Poverty Measures, Poor and Needy, Kelantan.

Abstrak: Artikel ini menganalisis kemiskinan dalam kalangan penerima zakat di Kelantan, Malaysia berdasarkan perbelanjaan. Kajian didorong dari aspek keberkesanan pengukuran yang berbeza daripada sebelum ini yang memberi tumpuan kepada pendapatan golongan miskin dan yang memerlukan. Sebaliknya, standard sebenar hidup adalah lebih baik diukur dengan perbelanjaan bukannya dengan pendapatan kerana kaedah sebelum ini lebih menjurus dalam mengukur taraf hidup sebenar. Sampel kajian terdiri daripada 983 yang diambil dari Kajian Perbelanjaan Isi Rumah 2014 melibatkan penerima zakat di Kelantan. Kesan agihan zakat terhadap kemiskinan dianalisis dalam konteks beban kemiskinan khususnya dari segi insiden, intensiti dan tahap kemiskinan. Ini diukur menggunakan tiga indeks utama kemiskinan yang meliputi Indeks Headcount, Index Gap Kemiskinan dan Indeks Sen. Hasil kajian menunjukkan bahawa golongan miskin dan yang memerlukan mempunyai tahap kemiskinan yang lebih tinggi berdasarkan perbelanjaan berbanding dengan ukuran kemiskinan pendapatan. Taraf kemiskinan adalah lebih tinggi di kawasan luar bandar. Semua kaedah telah mengenal pasti ketua isi rumah wanita luar bandar adalah yang termiskin. Daripada keputusan, dapat diperhatikan bahawa kemiskinan adalah lazim dalam kalangan isi rumah dengan ketua isi rumah wanita yang tinggal di kawasan luar bandar. Selain itu, hasil kajian menunjukkan kemiskinan turut berlaku dalam kawasan yang rendah jumlah penduduk miskin. Ini menunjukkan bahawa kemiskinan harus diukur berdasarkan kaedah perbelanjaan yang mencerminkan keadaan kemiskinan mereka. Keputusan artikel ini adalah penting bagi implikasi dasar Pusat Zakat Kelantan dalam membuat pengagihan zakat yang lebih cekap dan meningkatkan peranan penting zakat sebagai salah satu alat pembasmian kemiskinan dalam kalangan umat Islam.

Kata kunci: Perbelanjaan, Zakat, ukuran kemiskinan.

Background of the Study

This study attempt to analyse the poverty based on expenditure method which will cover the poverty incidence, the intensity, and the

severity of poverty among the poor and needy of the zakat recipient category in Kelantan, Malaysia. This study is motivated from the different aspect of previous zakat effectiveness

measurement which focuses on income of the poor and needy. In contrast, the actual standard of living is better captured by consumption than by income, since the former more directly measures the actual standard of living. In solving the Muslim's poverty and economic problems, Islam had brought a method called zakat¹. Zakat is one of the five pillars of Islam. Through zakat, the money from the well-off is collected and then distributed among the poor and needy. It is a principle that all things belong to Allah SWT, and that wealth is therefore held by human beings in trust. Besides that the zakat payment can purify the wealth of the well-off setting aside a proportion for those in need (Al Qardhawi, 2000).

This study will utilize two zakat poverty line based on 1) Current zakat poverty line which based on income; 2) New Zakat poverty line which based on expenditure. The new zakat poverty line is based on absolute poverty line which is based food items (calorie intake approach) and non-food items (shelter, education, medical, transport and personal utilities) which are the basic needs for human (Ahmad, 2016). The zakat poverty line is important because it determines qualified zakat recipients and differentiates between the poor (qualified for zakat recipients) and non-poor (not qualified for zakat recipients). Results from poverty measures in this group are divided into four categories. first is the family with female household head and live in rural area, second the family with male household head and live in rural area, third the family with female household head and live in urban area and forth the family with male head and live in urban area. All of these categories will be analysed using three major poverty indices of Household-count ratio (HC), poverty gap index (P) and poverty severity index (Sen index) to tackle three major issues of: how many are poor, the extent of poverty, and the severity of poverty.

Zakat and Poverty Reduction

Zakat is one of the five fundamental obligations of Islam. It is an obligatory form of worship (Ibadah) prescribed by Allah s.w.t.. Allah commanded in the Qur'an:

"... so establish Salat and give Zakat, and hold fast to Allah ..."

(Al-Qur'an 22:78)

Zakat is a duty from Allah similar to the duty of *Salat* (Al-Qur'an 2:43, 110, 177, 277; 4:162; 9:103; 24:56; 73:20; 98:5). For establishing *Salat*, the Muslim community organizes a place of worship (Masjid / Islamic Centre) to offer *Salat* in congregation. Similarly, the Muslim community is obligated to establish the institution of zakat in order to collect zakat from rich Muslims of the community and distribute it among the needy ones.

In a Hadith from Abu Dharr r.a. He reported that:

"I went to the Apostle of Allah (may peace be upon him) and he was sitting under the shade of the Ka'ba. As he saw me he said: By the Lord of the Ka'ba, they are the losers. I came there till I sat and I could not stay (longer) and (then) stood up. I said: Messenger of Allah, let my father, be ransom for you, who are they (the losers)? He said: They are those having a huge amount of wealth except so and so and (those who spend their wealth generously on them whom they find in front of them, behind them and on their right side and on their left side) and they are a few. And no owner of camels, or cattle or goat and sheep, who does not pay Zakat (would be spared punishment) but these (camels, cattle, goats and sheep) would come on the Day of Resurrection wearing more flesh and would gore him with their horns and trample them with their hooves. And when the last one would pass away, the first one would return (to trample him) till judgment would be pronounced among people."

(Muslim, Book 5, Number 2170)

¹ The system of Zakat has been set up with a view to helping the poor. Zakat literally means purity, clarity and rectification. In the terminology of *Shariah*, a fixed part of the wealth of a Muslim is to be given at the end of every year to the sectors determined by Allah SWT.

This spiritual element is emphasized in many other verses where it is represented as a loan given to Allah to be repaid many times over. To pay zakat is a cleansing process for the wealth and its owner (Patmawati, 2006). Allah not only promises reward in the hereafter but also will bless them with more wealth in this world (Al Qardhawi, 2000). The term itself indicates both purity and growth. The material element is manifest in its role as an important factor in social justice and peace. Because the poor and the needy are guaranteed a share in the wealth of the wealthy, it helps to harmony the relationship between the haves and the have-nots, thus reducing the chances of social disorder and the loss to the community of any proper participation by the poorer section (Patmawati, 2006).

Expenditure Poverty Measures

Most government in this world share a concern to ensure that their citizens are able to attain a minimum standard of living. This is generally justified on either social justice grounds that everyone has a moral right to a minimum level of access to society's resources or, more instrumentally, as necessary to avoid social division and unrest by guaranteeing everyone a minimally adequate level of social protection (Fahme, 2011). Further it is important for the poverty alleviation agencies such as zakat centre to measure poverty to be able to determine which region and areas are most impoverished so that aid can be targeted, and it is also important to monitor poverty rates over time.

While, most of poverty measures study among the poor and needy in zakat studies is based on total income rather on expenditure (Patmawati, 2006; Fuadah, 2004; Fahme, 2011; Fahme, 2015; Chaudhry, I. S., 2009). While some of them adjust the official income poverty line with the consumer price index (CPI) of annual changes in prices in order to measure the poverty (M. Kabir Hasan, 2010). In contrast, the actual standard of living is better captured by consumption than by income, since the former

more directly measures the actual standard of living. When estimating poverty using monetary measures, one may have a choice between using income or consumption as the indicator of well-being. Most analysts argue that, provided the information on consumption obtained from a household survey is detailed enough, consumption will be a better indicator of poverty measurement than income for the following reasons:

- i) Actual consumption is more closely related to a person's well-being in the sense of having enough to meet current basic needs.
- ii) Consumption is being better measured than income.
- iii) Consumption is a better reflection of household's ability to meet basic needs.

In addition there are four reasons to measure poverty. First, to keep the poor on the agenda; if poverty were not measured, it would be easy to forget the poor. Ravallion (1998) argues, "*A credible measure of poverty can be a powerful instrument for focusing the attention of policy makers on the living conditions of the poor.*" In other word, it is easy to ignore the poor if they are statistically invisible. The measurement of poverty is thus necessary for the zakat centre for their distribution agenda.

Second, one needs to be able to identify the poor if one is to be able to target interventions that aim to reduce or alleviate poverty (Seidl, C, 1988). Clearly, one cannot help the poor without at least knowing who they are. This is the purpose of a poverty profile, which sets out the major facts on poverty, and then examines the pattern of poverty, to see how it varies by geography (region), by community characteristics (with and without a school), and by household characteristics (education of household head). A well-presented poverty profile is invaluable, even though it typically uses rather basic techniques such as tables and graphs.

Third, to monitor and evaluate projects and policy interventions that is geared towards the poor (Alkire, S *et al.*, 2011). More generally, the third reason for measuring poverty is to be

able to predict the effects of, and then evaluate, policies and programs designed to help the poor. Policies that look good on paper new opportunities for microcredit for the poor, for instance and may, in practice, not work as well as expected. To judge the effects, one would ideally like to monitor the effects of a policy on the poor, and evaluate the outcomes in comparison with a control group. And finally, to evaluate the effectiveness of institutions whose goal is to help the poor (Bourguignon, F, 2003). One cannot tell if a government is doing a good job of combating poverty unless there is good information on poverty.

Research Methodology

This study will explore the poverty based on expenditure of the poor and needy which contrast with the previous study which focus on the income of the poor and needy. Three indexes were used in order to measures the poverty based on consumption expenditure. This chapter attempts to explore different methods in determining poverty lines and examine the robustness of the poverty profile which will cover the poverty incidence, the intensity, and the severity of poverty among the poor and needy. To measure the poverty incidence, we will use the head-count index (H) that gives the proportion of the poor households among the total households. The extent or depth of poverty is measured by using the poverty-gap ratio (I). The severity of poverty, which includes the income distribution among the poor, will be measured by the Sen's index of poverty (P_1). The Sen's index is a comprehensive poverty measure, which incorporates the information on the number of poor (H), the extent of poverty, measured by income gap (I), and the Gini coefficient (G), as an indicator of income distribution among the poor. The variables in this article is based on the calorie requirements of the Malaysia population which consist Age, Gender, Region, Pregnancy Period, Infant Period (Baby), Lactation, Size of the family and Status of the household head (Ministry of Health Malaysia, 2005).

The state of Kelantan has been selected for this study. Kelantan state has been selected because this state does not has its own zakat poverty line and currently utilized the zakat poverty line based from other state in Malaysia (Perak). The reason is that there is similarity in socio economic between these states. Secondary data also has revealed that this state is among the highest zakat collection and distribution in Malaysia but at the same time it has the highest amount of poor and needy in Malaysia (MAIK, 2013). Table 1 gives a clear picture on the difference between the amounts of zakat distributed and total amount of poor and needy in Malaysia. We can see that the Kelantan state is the seventh highest zakat collector in Malaysia but at the same time it has the second highest incidence of poverty in. The Wilayah Persekutuan and Selangor are the highest state of zakat collector in Malaysia and it is obvious because these states are privatizing both their zakat collector and distribution and they are more developed than any other states in Malaysia including Kelantan. For Kelantan, the Majlis Agama Islam dan Adat Istiadat Kelantan (MAIK) is given the responsible for collecting and distributing the zakat in Kelantan. The study will be covering ten districts altogether, comprising of both the rural and urban area.

Respondents for this study are selected from the list of MAIK zakat recipients of the poor and needy category, who are the target population of this study. The arrangement with MAIK was made in the mid of 2014. The most complete and latest data then was the year 2014 data. The fieldwork started in September 2014. With the cooperation of the R&D unit of MAIK, the research encompassed the entire ten districts of Kelantan. Sample of the study are 983 households (12 percent) of the total population of 8188 poor and needy households in Kelantan for 2014. Out of this 503 individual female respondents, 295 (59 per cent) comes from urban area and 208 respondent (41 per cent) come from rural area, as shown in Table 6.3. Further, 53 per cent (255 respondents) are male respondent from urban area and 225 (47 per cent) comes from rural area. Generally, from the household unit, 201 (54 per cent) respondents were drawn from urban female

Table 1: Amount of zakat collection, distribution and total amount of poverty incidence in Malaysia 2011

STATES	Collection (MYR) Million	Distribution (MYR) Million	Incidence of Poverty
Selangor	337	330	0.4
W. Persekutuan	282	201	0.8
Johor	122	115	0.9
Pahang	81	59	1.3
Kedah	77	66	1.7
Terengganu	76	62	1.7
KELANTAN	70	65	2.7
Perak	70	67	1.5
Pulau Pinang	53	54	0.6
Negeri Sembilan	50	52	0.5
Sarawak	39	24	2.4
Perlis	38	30	1.9
Melaka	34	30	0.1
Sabah	33	26	8.1

Source: JAWHAR 2012
Malaysia Department of Statistics

headed household and 174 (46 per cent) are rural female headed household. The remaining 130 household unit come from male urban (70 families) and male rural (60 families).

This study will utilize two zakat poverty line based on 1) Current zakat poverty line which based on income; 2) New Zakat poverty line which based on expenditure. The new zakat poverty line is based on absolute poverty line which is based food items (calorie intake approach) and non-food items (shelter, education, medical, transport and personal utilities) which are the basic needs for human (Ahmad Fahme *et al.*, 2016). The food poverty line is estimated based on Malaysia household calorie requirements. The calorie costs are measured by cost per calorie. The food poverty line could be determined based on the calorie cost of the poorest decile (or quintile), which is then adjusted to regional price differences (Kakwani and Sajaia, 2004). As there is no consensus on the estimation of the non-food poverty line, this study utilized three different methods for alternative non-food poverty lines. First, following Kakwani

and Sajaia (2004), we estimate the non-food poverty line using standard consumer theory. In consumer theory, a consumer maximizes his or her utility function by choosing a bundle of goods and services, subject to his or her budget constraint (income). As the food poverty line depends on the calorie requirement of the household, it varies between households and regions. Kakwani-Sajaia introduced the food welfare index which takes the value of 100 when per capita food expenditure is equivalent to the per capita food poverty line. Households whose food welfare index lies between 95 and 105 are chosen to estimate the average non-food poverty line. The per capita non-food expenditure on the items mentioned above for these selected households will represent the average per capita non-food poverty line for different reference groups. The food welfare ratio is a ratio of the households' actual food expenditure to the households' respective food poverty line, multiplied by 100.

Ravallion (1998) proposes a range of poverty lines with lower and upper bounds. The lower bound is the food poverty line itself,

with no allowance for non-food expenditure. At this point, any non-food expenditure can be viewed by definition as essential because it requires food consumption to fall below the required minimum. This corresponds to the official Malaysian definition of hard-core poverty. The upper bound includes the non-food expenditure of those households whose food expenditure just meets the food poverty line. Non-food components comprise clothing, housing, transport and other items. The non-food poverty lines are adjusted to regional costs of living (Ravallion and Bidani, 1994). As some of the prices for the non-food items are unavailable, this article utilizes the information on relative non-food prices available from the Malaysia Ministry of Domestic Trade, Co-Operative and Consumerism (2014) and Malaysia Department of Statistics report. All of these methods will be measured based on, those whose expenditure lies below the poverty line are considered poor, and those whose expenditure below half of the poverty line is considered hard core poor (UPEN 2007).

Results from poverty measures in this group are divided into four categories. first is the family with female household head and live in rural area, second the family with male household head and live in rural area, third the family with female household head and live in urban area and forth the family with male head and live in urban area. All of these categories will be analysed using three major poverty indices of Household-count ratio (HC), poverty gap index (P) and poverty severity index (Sen index) to tackle three major issues of: how many are poor, the extent of poverty, and the severity of poverty. Table 2 shows the amount of zakat poverty line based on current Had Kifayah, Kakwani and Sajaia, Ravallion Bidani Upper and Ravallion Lower methods in Kelantan.

Measuring Poverty

Three indexes were used in order to measures the poverty based on consumption expenditure. This chapter attempts to explore different

methods in determining poverty lines and examine the robustness of the poverty profile.

Headcount index (HC)

This widely-used index measures the proportion of the population that is poor. The index is

$$HC = \frac{q}{n} \quad (1)$$

HC takes on a value of 1 if the consumption expenditure (y_i) is less than the poverty line (z) and 0 otherwise.

Poverty gap index (P)

This measure the extent to which individuals' PCE falls below the poverty line, as a proportion of the poverty line. The poverty gap (G_i) is expressed as the poverty line (z) minus actual expenditure for the poor, with the gap being 0 for the non-poor.

$$P = \sum_{i=1}^q g_i \quad (2)$$

where $g_i = z - y_i$ is the income gap of household i . Therefore, the average poverty gap is $(z - m)$. $P=0$ if everyone has income greater than z , and $P_2=1$ if everyone has zero income.

Poverty severity index (Sen Index)

The severity of poverty, which includes the income distribution in the society, will be measured by the Sen's index of poverty. The Sen's index is a comprehensive poverty measure, which incorporates the information on the number of poor (HC), the extent of poverty (P) and the Gini coefficient (G), as an indicator of income distribution among the poor. The Sen's poverty index:

$$S = HC [P + (1-P)G_p] \quad (3)$$

Where;

HC = The head-count ratio HC ;

P = The poverty gap PG ;

G_p = The Gini coefficient G_p , a measure of the distribution of incomes among the poor.

The measure is made up of the head-count ratio HC multiplied by the poverty gap

Table 2: Kelantan Had Kifayah, Kakwani, Ravallion upper and lower bound poverty line 2014 (MYR per month)

Variables	Had Kifayah				Kakwani method				Ravallion Upper Bound				Ravallion Lower Bound			
	Urban		Rural		Urban		Rural		Urban		Rural		Urban		Rural	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Age¹																
> 6	103	103	77.5	77.5	151	141	106	68	168	157	118	76	86	92	61	46
6 – 12	180	180	131	131	200	166	130	54	222	184	144	60	137	134	97	45
13 – 18	237	237	167	167	189	168	123	105	210	187	137	117	145	138	99	90
19 – 24	274	274	204	204	291	254	164	100	323	282	182	111	237	228	138	88
25 - 59	297	297	182	182	464	589	290	312	515	654	322	347	396	439	241	246
< 60	140	140	88	88	316	402	248	239	351	447	276	266	272	330	220	214
Pregnancy¹																
2nd trimester	-	+72	-	+54	-	+46	-	+45	-	+51	-	+50	-	+42	-	+42
3rd trimester	-	+72	-	+54	-	+103	-	+99	-	+114	-	+110	-	+87	-	+87
Infant (Baby)¹																
0 - 5 months	+79	+79	+60	+60	+219	+134	+70	+116	+243	+149	+78	+129	+143	+94	+48	+91
6 - 11 months	+79	+79	+60	+60	+268	+164	+159	+139	+298	+182	+177	+154	+187	+133	+117	+127
Lactation¹																
1st six months	-	+140	-	+88	-	+107	-	+97	-	+119	-	+108	-	+88	-	+86
Size²																
1 - 4	247	247	166	166	395	377	194	173	439	419	215	192	295	264	169	150
5 - 8	223	223	155	155	406	383	185	161	451	425	205	179	223	188	134	110
9 and above	262	262	184	184	245	204	113	118	272	227	126	131	117	84	73	65
Status¹																
Non Married	297	297	182	182	342	326	239	218	380	362	265	242	307	278	212	197
Married	297	297	182	182	683	504	452	407	759	560	502	452	537	456	391	397
Married (live separate)	297	297	182	182	659	509	475	329	732	565	528	366	526	451	379	305
Widow / widower	297	297	182	182	693	618	484	417	770	687	538	463	478	423	387	343
Divorced	297	297	182	182	626	500	408	385	696	556	453	428	529	462	376	382
Kelantan	247	247	171	171	579	572	495	474	643	636	550	527	489	495	401	406

* M - Male Household Head; F - Female Household Head

1- Household Members; 2- Household Head

index (P) augmented by the Gini coefficient G of the distribution of income among the poor weighted by $[(1-P)]$, i.e. weighted by the ratio of the mean income of the poor to the poverty-line income level. The value of G will be lying between 0 and 1 ($0 \leq G \leq 1$). $G = 0$ indicates complete equality in the income distribution of the society. $G = 1$ indicates complete inequality in the income distribution of the society.

Results and Discussion

Table 3 shows the differences of total amount of income and expenditure in Kelantan for poor and needy category. The total income estimated from the Household Income Survey (HIS) showed relatively lower amount (MYR 480 827) compared to Household Expenditure Survey (HES) (MYR 584 791).

From Table 3, we can see that Kota Bharu has the highest monthly household income and expenditure while Tumpat has the lowest. The overall rankings of the poverty are still consistent regardless of the welfare measures used for the estimation suggest that the HES is a valid source. The difference between income and expenditure shows that Tanah Merah has the highest total difference between income and expenditure (14 percent) while Tumpat

has the lowest income-expenditure difference (8 percent). Higher amount of income and expenditure in Kota Bharu, Gua Musang and Pasir Mas indicate a higher amount of income and expenditure in urban area. Thus a higher job opportunity and higher urban consumer requirement had increase the income and expenditure in these areas.

Regional Poverty Measures

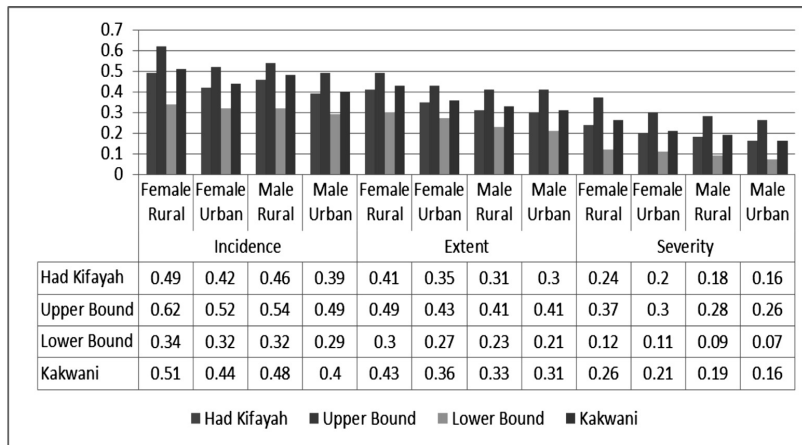
Results from previous tables can concluded into several important findings. Based on regional findings, it can be seen that rural area has the highest poverty incidence, poverty extent and severity. While for household head gender, female head gender enjoys the highest poverty incidence, extent and severity. Figure 1 shows that poverty measures results based on regional and gender in Kelantan.

Analysis on regional shows that the rural area has the highest poverty incidence, extent and severity compare to rural area. Those who aged 25 to 59 and female family member have the highest incidence in both urban and rural area. Higher number of poverty among this age signs that they are at the starting age for working, marriage and having kids where they require a high number of expenses (due

Table 3: Income and Expenditure - based method comparisons (2014) (MYR)

District	Total Income (1)	Rank	Total Expenditure (2)	Rank	Difference (3) = (2) - (1)	Rank
KELANTAN	480827	-	584791	-	103964 (100%)	-
Kota Bharu	63352	1	73056	1	9704 (9 %)	7
Gua Musang	53226	2	63227	2	10001 (10 %)	4
Pasir Mas	52352	3	61336	3	8984 (9 %)	9
Bachok	52153	4	61322	4	9169 (9 %)	8
Tanah Merah	46122	5	60945	5	14823 (14 %)	1
Jeli	44326	6	56544	6	12218 (12 %)	2
Machang	42485	7	53364	7	10879 (10 %)	3
Kuala Krai	42326	8	52243	8	9917 (10 %)	5
Pasir Putih	42258	9	52105	9	9847 (9 %)	6
Tumpat	42227	10	50649	10	8422 (8 %)	10

Source: Research questionnaire.



Sources: Research Question

FR- Female Rural; MR-Male Rural; MU- Male Urban; FU - Female Urban

Figure 1: Kelantan poverty measures results based on regional and gender

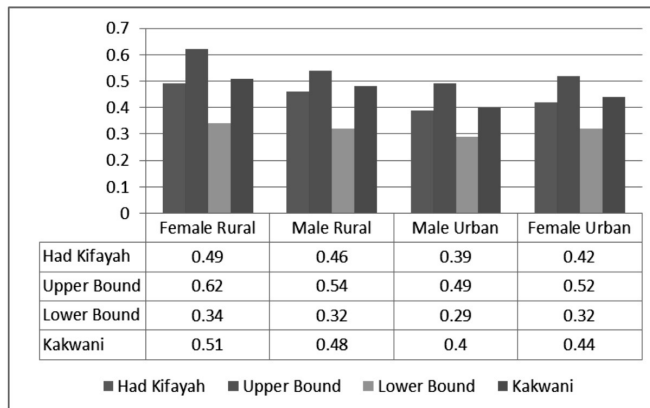
to moving out of family house and extension of family). At the same time it's hard for them to find a higher wage job in order to cope with their higher expenses. This barriers are comes from their lack of skills and working experience that barrier them from acquiring high income and high wage job. Higher incidence in rural area suggests that besides the need for skilled a labour force there is also a need for local demand for the goods and services produced in rural sector.

Effects on poverty measures for pregnant women shows that rural resident has a higher poverty incidence however for infant baby and lactation mother, the urban area face a higher amount of poverty incidence. Lack of information and accessibility to health service among the rural pregnant had been the main causes for higher poverty incidence among this category. It is true that information on free health service and medical supplies are not well known among the rural family. Although massive programs had been organized by the government, most of rural resident did not understand the important of proper medical requirement during their pregnancy and lactation and also for babies.

Size of family shows that lower size family in urban has higher amount of poverty incidence where for rural area, family with 9 and

above has the highest family incidence. Higher poverty incidence among lower size family in urban area shows that lower size family in urban has high number of children ratio which lower their source of family income. It also a sign that a high number of non-working adults in family which has higher expenditure but failed to acquire income for family (i.e; old folks and disable person). While a high incidence among higher size family in rural area are caused by high number of children in family. Although the children has a lower expenditure compare to adults, but with high number of children in family the family suffers more compare to small size family in rural area. For marital status of the household head, widow/widower and married has the highest poverty incidence for both regions. Most of the widow/widower is female headed household while the married are the male headed household. Higher poverty incidence is reported in rural area which suggests their lack of expenditure and income resource. Figure 2 show the poverty incidence for Kelantan.

The poverty extent shows that the rural area is still have the highest poverty gap results for household zakat recipients of the poor and needy category in Kelantan. By age those who aged 25 to 59 have the highest extent in all region with the highest is in female rural family.



Sources: Research Question

FR- Female Rural; MR- Male Rural; MU- Male Urban; FU - Female Urban

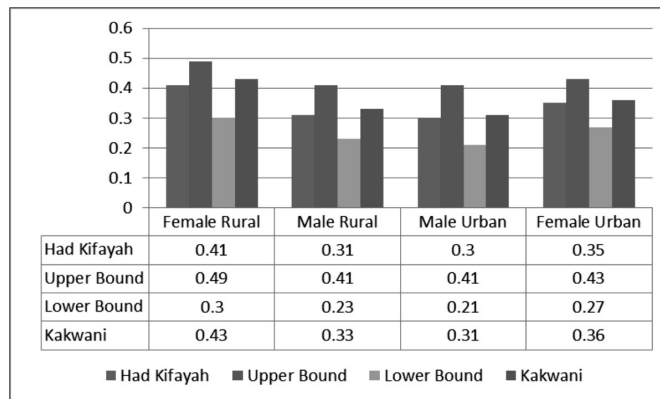
Figure 2: Kelantan urban-rural poverty incidence (headcount index)

Based on the gender of family members, the female rural household face a larger poverty extent. Effects on poverty extent for pregnant women, infant baby and lactation mother shows that rural resident has a higher poverty extent. Lack of information on medical assistant as well as less concern on their medical and other needs during pregnancy and lactation period had increase their poverty gap. For family size, female headed household show that lower size family (1 to 4) member has the highest poverty extent while for male headed household higher size (9 and above) member has the highest poverty extent. Low poverty gap among big family suggest that they are enjoying economies of scale in family expenditure where some goods are shared between them. Thus this had lower their expenditure and reduces their poverty gap. For marital status of the household head, the female headed household who are widow/widower suffers the most poverty gap while for male headed household, those who married has the highest poverty gap. The widow/widower among the female headed had more drawback compare to male widow/widower. Most of them had higher children family members and difficulties in acquiring income for family. Further the expenditure among the female headed suggest that they has higher expenditure and they are tend fulfil the basic need of the family which different from

male headed household. While the male headed household had higher poverty gap among the married status due to higher amount of adults (teenagers) in family which increase their expenditure. Although most of the adults family members are working and manage to acquire income for the family, low wage which causes by low academic qualification and lack of skills did not manage to cope with their expenditure. Figure 3 show the results for poverty extent in Kelantan.

Results on poverty severity show that the severity of poverty in Kelantan is centred among the rural area. The expenditure distribution among the people in rural area is distinctly unequal. It can be seen that the rural area has the highest poverty severity which they has the highest degree of inequality among the poor. The result of poverty severity which takes into account of inequality among poor showed the worst amount of expenditure inequality in this area. Figure 4 show the results for poverty severity in Kelantan.

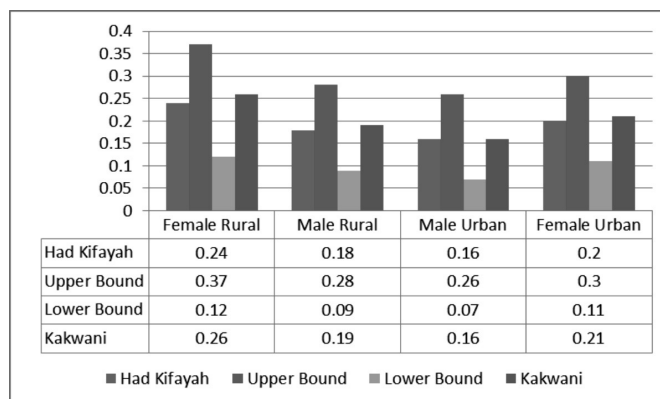
The poverty severity shows that the rural area has the highest inequality among poor in Kelantan. Based on age, those who aged 25 to 59 have the highest severity in all region with the highest is in female rural family. The gender of family members shows that the rural female households face a larger poverty severity. Effects on poverty severity for pregnant



Sources: Research Question

FR- Female Rural; MR- Male Rural; MU- Male Urban; FU - Female Urban

Figure 3: Kelantan urban-rural poverty extent (gap)



Sources: Research Question

FR- Female Rural; MR- Male Rural; MU- Male Urban; FU - Female Urban

Figure 4: Kelantan urban-rural poverty severity (sen index)

women, infant baby and lactation mother shows that rural resident has a higher poverty extent. For family size, female headed household show that lower size family (1 to 4) member has the highest poverty extent while for male headed household higher size (9 and above) member has the highest poverty severity. For marital status of the household head, the widow/widower rural household suffers the most poverty severe which indicating that poverty for the poorest has become more severe.

Household Head Gender Poverty Measures

Based on gender of the family head, the female family head has the highest poverty incidence,

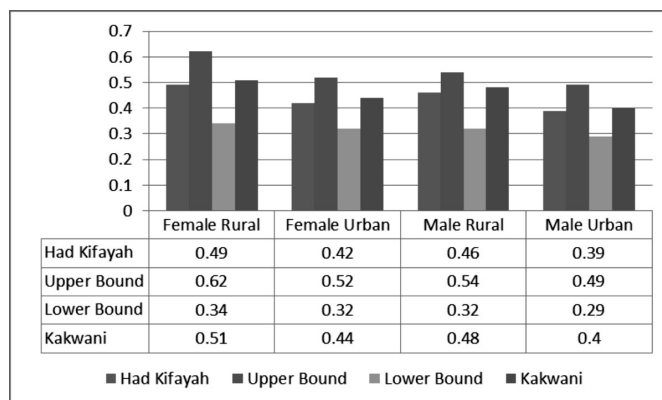
extent and severity compare to male family head. The female household head family face a greater poverty chances compare to male household head family. The female family member show higher poverty measures which comes from additional expenses that they require such as cloth i.e: *Tudung* (headscarf), prayer cloth and menstrual pad. By age, those who aged 25 to 59 has the highest incidence among both gender of household head. Based on the gender of family members, the female household face a greater poverty incidence except for female headed in urban area. It shows that female family members in urban area are mostly dominated by female members where they have low sized family and with female

headed (mother) most of their expenditure (needs) will be fulfilled before other expenses. Effects on poverty incidence for pregnant women show the third trimester pregnancy has a higher poverty incidence in both household head gender. The infant baby show that baby age 6 to 11 month among the male headed household face a higher amount of poverty incidence except for male rural area where baby aged 0 to 5 months has a higher poverty incidence. The family size shows that female headed family face greater poverty incidence among big size family while the female headed family has greater poverty incidence among low size family in both regions. For marital status of the household head, the married male has a higher poverty incidence and for female headed the widow/widower family head has the highest poverty incidence. Figure 5 show the poverty incidence for gender household head in Kelantan.

The poverty extent shows that the female household head and female member among family are still has the highest results for household zakat recipients of the *fuyara* and *masakin* category in Kelantan. By age both the female and male household head shows a higher poverty extent for those who aged 25 to 59. Effect on poverty measures for pregnant women, infant baby and lactation mother shows that male household head has a higher poverty extent compare to female household head. For

family size, different results for household gender where for female headed family has a higher poverty measures on lower sized family (1 to 4) while for male headed family their poverty are more concentrate on big size family (9 and above members). The marital status of the household head show similar results based on poverty incidence where the married male has a higher poverty extent and for female headed the widow/widower family head has the highest poverty extent. Figure 6 show the poverty extent for gender household head in Kelantan.

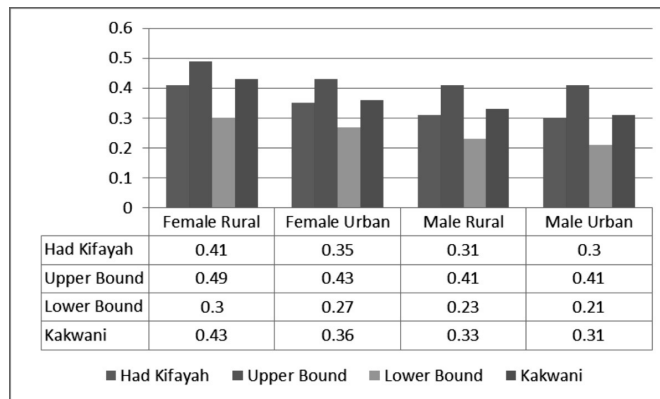
The poverty severity shows that in Kelantan the severity of poverty is centred among the female headed and female members of household. The expenditure distribution among the female is distinctly unequal. The result of poverty severity which takes into account of inequality among poor showed the worst amount of expenditure among female gender both as head of family or member of family. High amount of Sen index ($0 < S < HC$) shows that the higher of inequality of expenditure among the poor and needy while lower amount of S shows that most of expenditure are equally distributed among the poor and needy. Recall that the value of S lies in the closed interval $[0, HC]$, with $S = 0$ if everyone has perfect equality, and $S = HC$ if everyone has zero perfect inequality. Figure 7 show the results for poverty extent in Kelantan.



Sources: Research Question

FR- Female Rural; FU - Female Urban; MR-Male Rural; MU- Male Urban

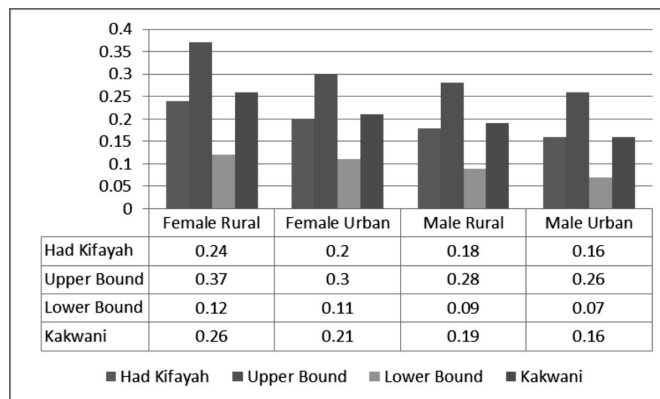
Figure 5: Kelantan poverty incidence for gender household head



Sources: Research Question

FR- Female Rural; FU - Female Urban; MR-Male Rural; MU- Male Urban

Figure 6: Kelantan poverty extent for gender household head



Sources: Research Question

FR- Female Rural; FU - Female Urban; MR-Male Rural; MU- Male Urban

Figure 7: Kelantan poverty severity for gender household head

From this result, we can compare the level of poverty incidence and poverty extent which have different level of poverty incidence and poverty extent. For example, results for poverty incidence show that female urban has the lowest amount of poverty incidence compare to other family. However based on the poverty extent, they have the highest amount of poverty gap compare. This has proved that urban female headed family has a less number of poor people, but their poverty is more severe. Table 4 show the results for poverty rank in Kelantan.

Results from poverty incidence show that based on ranking the male rural headed (MR) family has the second highest amount while female urban headed (FU) family has the third

poverty incidence. However based on the poverty gap that measures the shortfall of the income from the Poverty Line Index, the female urban headed family has higher poverty gap compare to male rural headed family. It signify that although the incidence (quantity) in female urban headed family is not too bad (compared to male rural headed family) but their gap (quality) in worse than male rural headed family. It might be the case that male rural headed family has a high poverty incidence but low poverty gap (when numerous members are just below the poverty line), while for female urban headed family they have a low poverty incidence but a high poverty gap for those who are poor (when relatively few members are

Table 4: Kelantan poverty rank

	Incidence				Extent				Severity			
	HK	UB	LB	K	HK	UB	LB	K	HK	UB	LB	K
FR	0.49 (1)	0.62 (1)	0.32 (2)	0.51 (1)	0.41 (1)	0.49 (1)	0.30 (1)	0.43 (1)	0.24 (1)	0.37 (1)	0.12 (1)	0.26 (1)
MR	0.46 (2)	0.54 (2)	0.34 (1)	0.48 (2)	0.31 (3)	0.41 (3)	0.23 (3)	0.33 (3)	0.18 (3)	0.28 (3)	0.09 (3)	0.26 (2)
FU	0.42 (3)	0.52 (3)	0.32 (3)	0.44 (3)	0.35 (2)	0.43 (2)	0.27 (2)	0.36 (2)	0.20 (2)	0.30 (2)	0.09 (2)	0.21 (3)
MU	0.39 (4)	0.49 (4)	0.29 (4)	0.40 (4)	0.30 (4)	0.41 (4)	0.21 (4)	0.31 (4)	0.16 (4)	0.26 (4)	0.07 (4)	0.16 (4)

Sources: Research Question ; Parentheses donetes the rank

FR- Female Rural; MU- Male Urban; MR-Male Rural; FU - Female Urban

HK - Had Kifayah; UB - Upper Bound; LB - Lower Bound; K - Kakwani

below the poverty line but with extremely low levels of income). Compared to herders, the male rural headed family has a higher risk of being in poverty, but the poverty is more extent among female urban headed family. Further, the types of interventions needed to help the two groups are therefore likely to be different.

Conclusions

The three poverty indices highlight several characteristics. Poverty incidences are higher in the rural areas. All methods identify the poorest gender household head is rural female. This concurs with the previous poverty study. The poverty incidences estimated using the expenditure approach are higher than the official reported incidences (current zakat poverty line). The incidences of poverty differ is depending on the methods, reference groups and welfare measurements adopted. Generally, the lower bound poverty lines generate the lowest estimates of poverty while the upper bounds generate the highest. The different poverty measurements show that Kakwani-Sajaia's method is always in between Ravallion-Bidani's lower and upper bound. However Kakwani-Sajaia's method produces higher headcount rates compared to the current zakat poverty line rate.

From the results, it is noted that poverty is prevalent among the households with female household's head who live in rural area. Most

of the previous study about poverty agreed that female households head women have higher poverty rates than men in almost all societies (Casper *et al.*, 1995). There are two main reasons poverty is more serious among female household head; 1) lower income due to lack of capability to work in a job that is dominantly by male, and 2) single mother who life with children (Diana Deere *et al.*, 2012; Larrimore, J., 2014; De Carvalho Filho, I. E., 2012). For a female headed household, finding a job that is suitable with their capability, skills and qualification will be hard mostly with the competition from male gender (Dankelman, *et al.*, 2013; Dulini Anuvinda Fernando, W., 2012). Most company will preferred to pay for male gender for they have more strength and capability in doing various jobs. While this had left the female gender only one more choice, that is by involved in doing hard work such as working in security (i.e; Factory or school) and driver (i.e; bus driver) which is not all female gender is capable to do it. Having children in the household affects the likelihood of poverty in one definitional way (De Graaf-Zijl, M., & Nolan, B., 2011; Webster, C., & Kingston, S., 2014). Since the poverty line is adjusted for household size, the presence of children in a household raises the expenditure necessary for the household to escape poverty, and thus, income equal, single adults who live with children are more likely to be poor than those who live alone. Single mother are much

more likely to live with children than single men, since women usually have custody of the children in cases of divorce or no marital births (Lipman, *et al.*, 2014; Laosa, *et al.*, 2014). Thus, even if single men and women had equal earnings, more of the women than the men would be in poverty by virtue of supporting children.

Results from poverty measures prove that high of poverty incidence, extent and severity, can also happen in developed area (urban) compared to underdeveloped area (rural). Besides that, the results of this study show that the extent of poverty can be high in low poverty incidence area. This means that, even though the number of poor is small, but the poverty gap is high. In other words, the poor people in that area have a lower expenditure. For example, result from urban female family who live in urban area shows that their poverty incidence is the lowest among other family. However their poverty gap show that this type of family suffer the highest poverty gap. This situation implies that, even though their poverty incidence (quantity) in that area is not too bad (compared to other marital status variable) but their gap (quality) is worse. It might be the case that they have a low poverty incidence but a high poverty gap for those who are poor (when relatively few members are below the poverty line but with extremely low levels of expenditure).

The significant differences in the estimated poverty incidences from the official measurement lie in three identified factors: the choice of welfare measures (consumption or income based); reference groups; and methods adopted. Further decomposing the effect shows that the consumption-based welfare measurement generates higher poverty incidences compared to the income-based welfare measurement adopted by the government. This suggests that large proportion of the poor have incomes above the poverty lines but consumption below it. This coincides with a comparative study of poverty based on different welfare measures by Knight and Li (2006). They found that poverty incidence for individuals who are income

but not consumption poor is lower than those who are consumption but not income poor in urban China. They concluded that the former experienced dissaving of 74 per cent while the latter experienced saving for not lesser than 42 percent. Those with low consumption relative to income are partly smoothing their consumptions and saving due to high risk of unemployment. If the poor in Malaysia have strong precautionary savings facing the risk of unemployment, this indicates a need for greater public support of the unemployed.

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