I really enjoyed reading the Thesis entitled – Changing Household Age Sex Composition and Consumption Expenditure Pattern in India submitted by Barsharani Maharana. While I am scrutinizing the thesis, it is observed that along with the increase in population in India over the period under discussion (1993-2007-08), the Household composition by Age Sex are also found changing accompanied by changes in consumption expenditure pattern of the households. But the question is as to how and to what extent the changing household Age-Sex composition could influence the Expenditure pattern of the household in India.

It is against this backdrop that the scholar may be considered to have well chosen the present topic of the theses which has been organised for a detail analysis in Seven Chapters of 170 pages with an additional 9 pages (171-179) covering nearly 73 relevant References of Books, Journals, Reports etc. But it can be mentioned that as usual, out of the Seven Chapters, while the first chapter is devoted to deal with the Introduction of the proposed thesis to highlight the Objectives, Hypothesis, Methodology etc. based on the review of relevant literature; the Seventh Chapter is a presentation of the Summery of the conclusions arrived from different Chapters of the thesis. The scholar has also adopted more or less the same pattern in each and every Chapter by presenting the introductory note just at the outset and the summary and conclusion at the end of the same Chapter. The main analysis of the thesis are, therefore, confined only in the remaining five chapters i.e. from chapter: II to Chapter VI (page 26-157) supported by 44 tables with the illustration of 85 figures prepared from the results of the data on household consumer expenditure collected from various rounds of national sample survey (NSSO) viz., the 49th round (1993), the 55th round (199902000) and the 64th round (2007-08). In this respect, the Chapter wise comments of the analysis are as follows:

That, as mentioned earlier, Chapter: I is an introductory nature followed by the second Chapter(II) in which the author presents the changing household age-sex
composition in relation to the expenditure pattern in general over the period (1993-2007-2008) while the third, fourth, fifth and sixth chapters, aim to spelling out the different levels of relationship between the changing household age-sex composition with that of expenditure on food and non-food (Chapter-III), expenditure on education (Chapter-IV), expenditure on health (Chapter-V) and expenditure on different regions of the country (Chapter-VI) respectively. Here it can be mentioned that the scholar seems to have intelligently adopted the Theil’s Index which unlike other measures of inequality, is not only a composite index but also a flexible enough to accommodate the process of decomposition in relation to the changes of expenditure pattern over time subject to the changes in household composition particularly (Chapter-IV, (Page 78-79)) Fig 4.1, 4.2 and 4.3 and Table 4.2 and 4.3. Further, this is also revealed that the Theil’s index having different measure, (T & L) explains the significance and differences of relative changes in the log health care expenditure (Chapter-V) Page 80, 81 (Table 5.5) and the expenditure pattern in different regions of India (Chapter-VI) Page. 129 in Table 6.4. Thus the scholar has successfully worked out the degree of relationship between household composition by age and sex on the one hand and consumption expenditure pattern on the other with a few recommendations for future study (Chapter-VII).

Now, considering the ability of the author in preparing thesis of this nature, I have the pleasure to recommend the thesis for the award of the degree of Ph.D. in Population Studies. But the scholar has not looked into the role of other variables which could also influence the household expenditure pattern in view of the changing socio-economic scenario of the country to make the thesis more comprehensive rather than just being an interpretation of the related statistical data. Further, the scholar must also see that the thesis was carefully edited to avoid the typical errors as far as possible.
Clarification to Examiner’s Comment (Examiner-I)

**Observation:** The scholar has not looked into the role of other variables which could also influence the household expenditure pattern in view of the changing socio economic scenario of the country to make the thesis more comprehensive rather than just being an interpretation of the related statistical data.

**Clarification:** In Chapter-II the change in socio economic and demographic scenario over time is explained in Table 2.1, where it is observed that the distribution of adult and elderly population has been increasing over time along with that of female population. The adult and elderly population have increased by five and two percent respectively over the period. Nevertheless, the distribution of child population has substantially declined (36.55 to 29.47 percent) from 1993 to 2007-08. Percentage of currently married population is relatively high in 2007-08 than 1999-00 and 1993, whereas the unmarried, widowed and divorced population distribution has declined over time. The distribution of never married population has declined from 51 percent to 47 percent, though the currently married population has increased from 44 percent to 48 percent. When it is the occupational status of the population, the distribution of cultural labours has declined from 31 percent to 21 percent and population working in agricultural sectors (29 percent to 37 percent) and other sectors (7 percent to 12 percent) have increased from 1993 to 2007-08. Percentage of literate population has substantially increased from the first to the latest survey period. In 1993, 53.2 percent population are literate which has increased by 9 percent in 1999-00 and in 2007-08 it has increased to 92.0 percent. The findings shows that the change in demographic composition is concurrent with the change in socio-economic structure of the population.

However, in Chapter-III (Table 3.6 & table 3.7), Chapter-V (Table 5.5) and Chapter-VI (Table 6.5 thru 6.8), an attempt has also been made to examine the effect of socio economic and demographic factors on Food, Non-food, Education and Healthcare expenditure over the period. Where the background characteristics are age, sex, place of residence, marital status, caste, educational qualification and monthly percapita consumption expenditure. The results reveal that currently married women are morelikely to spend on food, non-food and health care than the
unmarried women, which is obvious because in Chapter-I (Table 2.1) it is observed that the proportion of currently married women has been increasing over time. It is also observed that the health care expenditure among literates in 2007-08 is comparatively high as compared to the illiterates as the proportion of literate population has increased over the period and ofcourse for the other factors like health awareness among literates is more than the illiterates.

**Observation:** The scholar must also see that the thesis was carefully edited to avoid the typical errors as far as possible especially for publication.

**Clarification:** The typological errors are taken care and shall be further edited during publication.
EVALUATION REPORT OF Ph.D. THESIS

Changing size and composition of Indian households owing to the family nucleation and demographic transition has a definite bearing on household well being. The one indicator that is most commonly used to reflect the same is in terms of quantum and composition of consumption expenditure. Such expenditure is undoubtedly shaped by the household composition and various components of the total expenditure too re influenced by the age-sex composition of household members. This thesis is an attempt in this direction to relate the expenditure pattern to that of the structure and composition of the household. While there is a clear motivation to evaluate the changing consumption expenditure pattern in Indian household in relation to the age-sex composition of household members, this thesis has engaged more on highlighting the temporal change rather than few contentious aspects of differential welfare implication of such changing expenditure pattern on individual household members. In terms of disaggregation, it has focused mainly on food non food divide along with health and education expenditure component in the reading the observed temporal change in expenditure pattern. The candidate has situated the problem in a very narrow perspective as revealed from the conceptual framework and as a consequence it misses out on a whole stream of literature that discusses on welfare derivative and its differential implication for members of the households in a changing scenario of consumption expenditure pattern. Nevertheless, an attempt of this kind is commendable provided they unfold certain complex intra-household realities with regard to benefiting from the rising level of consumption expenditure.

Now let me make some critical observation on the kind of tools and method adopted by the candidate to assess the changes. To comprehend the changes in household composition in terms of age and sex the broad categories adopted in terms of children, working age population and elderly sounds fine. However, the composition could have been conceived in terms of presence and absence of all these three categories on one hand and their count ratio on the other. Further, Reading changes in the distribution over time could be more sound with the use of a distribution function rather than a density that has been displayed for the purpose.
Some of the tabulation attempted towards explaining the observed change need not have the whole host of background characteristics, because the purpose and objective of this work is to recognize the change and associate the same with changing compositional structure of Indian households.

The attempt at explaining the food and non-food divide in the expenditure and relate it to the age-sex composition somewhat overlooks the fact that this divide is also responsive to the changing levels of consumption expenditure (CE) i.e. with rising levels of CE, the non-food share rises. Besides this observation, another issue relates to lack of manoeuvrability of food expenditure in some households more than the others. This is particularly the food basket of children and elderly are less prone to substitution when compared with the food of adults.

As regard educational expenditure which is responsive to smaller number of children pursuing education and at varying levels need not be the only reason for the changing pattern of educational expenditure. In fact the candidate has attempt an analysis of its component as well which offers interesting insights towards the rising concern for quality in education. However expenditure on education is greatly influenced by the public/private divide in educational infrastructure. Similar analysis has been made as regard health expenditure which is crucial because health related vulnerability is age linked with the early age and old age being more vulnerable. As expected, this exercise also finds health expenditures to be greater among households with greater share of children and elderly. A temporal comparison indicates a rise in the quantum of health expenditure with it composition being varied as well. The candidate makes a final attempt at exposing a regional pattern of this consumption expenditure which is undoubtedly responsive to the differential state of demographic transition on one hand and development on the other. The regional facet of this study seems to indicate that with declining household size, the non-food share of expenditure is greater and therefore the expenditure pattern is towards greater welfare. Although the study’s focus was to relate household age-sex composition to that of the pattern of household consumption expenditure, the axis of analysis should not have been limited to the broad age groups and between sexes alone. Given that consumption expenditure is reported for the households, ideally households should have been categorised in
varying characteristics like presence/absence of children/adults/elderly, extent of dependency, sex ratio, children of educational age or not etc to examine the differential consumption pattern. While it is interesting to observe varying consumption pattern of Indian households, making its association with the said categorisation may derive clues to that effect.

Despite these critical observations, I find quantum of work adequate for a doctoral thesis. It undoubtedly involves exhaustive use of information and application of analytics to make some interesting observation. This is an illustration using temporal survey based information to comment upon the changing dynamics of consumption pattern in response to changing demographic scenario in India. **Considering the exercise s comprehensive, exhaustive and holistic in content, I have no hesitation in awarding the degree of doctor of philosophy in Population Studies to the candidate.**
Clarification to Examiner’s Comment (Examiner-II)

**Observation:** The candidate has situated the problem in a very narrow perspective as revealed from the conceptual framework and as a consequence it misses out on a whole stream of literature that discusses on welfare derivative and its differential implication for members of the households in a changing scenario of consumption expenditure pattern. Nevertheless, an attempt of this kind is commendable provided they unfold certain complex intra-household realities with regard to benefiting from the rising level of consumption expenditure.

**Clarification:** The focus of the present study is towards change in consumption and expenditure associated with age-sex composition change at the household. Welfare aspects of members of household would require a different approach.

**Observation:** To comprehend the changes in household composition in terms of age and sex the broad categories adopted in terms of children, working age population and elderly sounds fine. However, the composition could have been conceived in terms of presence and absence of all these three categories on one hand and their count ratio on the other.

**Clarification:** Household composition is taken care of in the terms that the change in percapita household expenditure for food, non-food, education and health in the presence/absence of children/adults/elderly and are explained in Chapter-II (page no. 37), Chapter-III (page no. 63), Chapter-IV (page no. 87) and Chapter-V (page no. 116) respectively. Also the change in percapita expenditure for food, non-food, education and health is explained for the households with one child, two children and three or more than three children. Similarly the change in expenditure over time is explained for the households with one adult/elderly, two adults/elderly and three or more than three adults/elderly.

**Observation:** Reading changes in the distribution over time could be more sound with the use of a distribution function rather than a density that has been displayed for the purpose.
Clarification: The probability density function is more suitable in this analysis than the distribution function in the context that all the food, non-food, education and health care expenditure are continuous random variables with non-negative values.

Observation: Some of the tabulation attempted towards explaining the observed change need not have the whole host of background characteristics, because the purpose and objective of this work is to recognize the change and associate the same with changing compositional structure of Indian households.

Clarification: Though the work is associated with the changing compositional structure of Indian households and consumption expenditure pattern, some of the background characteristics like place of residence, caste, marital status, educational qualification and monthly per capita consumption expenditure have taken into consideration during explanation of the observed change. These socio-economic characteristics are taken into consideration in view of the changing socio-economic scenario of the country to make the thesis more comprehensive.

Observation: Although the study's focus was to relate household age-sex composition to that of the pattern of household consumption expenditure, the axis of analysis should not have been limited to the broad age groups and between sexes alone. Given that consumption expenditure is reported for the households, ideally households should have been categorised in varying characteristics like presence/absence of children/adults/elderly, extent of dependency, sex ratio, children of educational age or not etc to examine the differential consumption pattern.

Clarification: The change in per capita household expenditure for food, non-food, education and health in the presence/absence of children/adults/elderly are explained in Chapter-II (page no. 37), Chapter-III (page no. 63), Chapter-IV (page no. 87) and Chapter-V (page no. 116) respectively. Also the change in per capita expenditure for food, non-food, education and health is explained for the households with one child, two children and three or more than three children. Similarly the change is explained for the households with one adult/elderly, two adults/elderly and three or more than three adults/elderly. It is found that with the increase in numbers of children in the households the average expenditure
decreases over time and the monthly percapita spending of the households has been increasing with the increase in number of adults and elderly.

Extent of dependency ratio and sex ratio are taken care of during publication. However, in Chapter-IV dynamics of educational expenditure over the time is explained by the children of different educational groups. Where age of children are categorized into five groups 6-11 for primary, 12-13 for upper primary, 14-15 for secondary, 16-17 for higher secondary and 18-34 for higher educational levels according to government education system in India.