

# EFFECTS OF UNPAID CARING ACTIVITIES AND SOCIAL NORMS ON WOMEN'S EMPLOYMENT IN MANGROVE AREAS OF RAMSAR SITE 1017 IN BENIN (WEST AFRICA)

Elie A. Padonou , Carolle M.A. Avocevou-Ayisso , Murielle Zanou , Maxime M. Obe ,  
Symphorien Agbahoungba , Brice Sinsin

Elie A. Padonou , Carolle M.A. Avocevou-Ayisso , Murielle Zanou , Maxime M. Obe ,  
Symphorien Agbahoungba , Brice Sinsin

©2023, ELIE A. PADONOU , CAROLLE M.A. AVOCEVOU-AYISSO , MURIELLE ZANOUE , MAXIME M. OBE , SYMPHORIEN AGBAHOUNGBA , BRICE SINSIN



This work is licensed under the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/legalcode>), which permits unrestricted use, distribution, and reproduction, provided the original work is properly credited. Cette œuvre est mise à disposition selon les termes de la licence Creative Commons Attribution (<https://creativecommons.org/licenses/by/4.0/legalcode>), qui permet l'utilisation, la distribution et la reproduction sans restriction, pourvu que le mérite de la création originale soit adéquatement reconnu.

*IDRC GRANT / SUBVENTION DU CRDI : - SOLAR ENERGY AND BIOTECHNOLOGIES FOR WOMEN ENTREPRENEURS IN THE MANGROVES OF RAMSAR SITE 1017 IN BENIN (SEWOMEN)*



## Regular Article

## Effects of unpaid caring activities and social norms on women's employment in mangrove areas of Ramsar site 1017 in Benin (West Africa)

Elie A. Padonou<sup>a,b</sup>, Carolle M.A. Avocevou-Ayisso<sup>a</sup>, Murielle Zanou<sup>c</sup>, Maxime M. Obe<sup>a</sup>, Symphorien Agbahoungba<sup>b,\*</sup>, Brice Sinsin<sup>b</sup>

<sup>a</sup> School of Tropical Forestry, National University of Agriculture, BP 43, Ketou, Benin

<sup>b</sup> Faculty of Agronomic Sciences, University of Abomey-Calavi, Laboratory of Applied Ecology, 01 BP 526, Cotonou, Benin

<sup>c</sup> School of Rural Economics and Sociology, Faculty of Agronomic Sciences, University of Abomey-Calavi, Benin

## ARTICLE INFO

## Keywords:

Childcare  
Household types  
Social norms  
Mangroves  
Unpaid care  
Benin

## ABSTRACT

Social norms drive women to practice unpaid caring activities that constitute an important barrier to their access to paid activities within the labour market in Benin. Assessing how far unpaid caring activities affect their business activities will help to improve the livelihoods of women. A survey was carried out in the district of Ouidah, with 300 households randomly selected to be issued with a questionnaire. Four types of households were identified according to their different characteristics. Payment for domestic work varied from one household to another. Most of the household types entrusted the care of their children to family members. Childcare, eldercare, and other home tasks were assigned to women according to the social norms, with men carrying out the more physically demanding roles (coconut harvesting, moto riding, basket lixiviation, palisade construction, fishing). The time allocated to work by women decreased with the increased coverage of the households' needs and the education level of women in the household. This study provides knowledge that could help decision makers to design appropriate strategies to reduce women's unpaid domestic work and to close the gender gap in the different households in mangrove areas of Ramsar site 1017 in Benin.

## 1. Introduction

Domestic work includes all domestic and garden activities realized at home by a person who is a family member to facilitate the life management and personal needs of family (D'Souza, 2010). It may be conducted on a full time or part time honorary basis. Domestic work can be distinguished from the home work that is covered in Benin by Convention 1996 (No. 177). Within the household, it constitutes all tasks of housekeeping realized by the family members, and does not provide compensation for the labourer. The difference between a dependent home labourer and an independent labourer who also works in a household is determined by many factors that are recognized by every justice system. The recommendations of Convention 2006 on work relations (No. 198) enumerate the factors, including the controls placed on the labourer or the frequency of his/her payment (ILO, 2007). Home-work constitutes a strategy for women to harmonise their professional and family responsibilities.

Benin has ratified the eight fundamental conventions of the

International Labour Organization (ILO). Apart from these conventions, the country has signed the following agreements: the convention of December 18, 1979 related to the eradication of all forms of discrimination against women and the convention of November 20, 1989 related to the rights of children. In 2011, Benin legislated on the minimum age for domestic work and fixed it at 18 years (Ahououkoun, 2016). However, in general, domestic labour represents the weakest part in the work regulations and it is thus important to elaborate specific laws recognising the particular conditions of any atypical work situation. In 2011, the ILO adopted Convention No. 189 that promotes decent working conditions for domestic labourers (An, 2018). That convention imposes guarantees for domestic workers such as: fundamental rights, written work agreements, the conditions of basic work, safety and health at work, social security and sanctions (WIEGO, 2018). In this way, domestic labourers benefit from specific international legal protections. In addition, given the large number of women involved in domestic work, the extension of the legislation to domestic labours represented progress toward gender balance in this sector. It is important to note that both the

\* Corresponding author.

E-mail address: [agbasympho@gmail.com](mailto:agbasympho@gmail.com) (S. Agbahoungba).

<https://doi.org/10.1016/j.ssaho.2022.100387>

Received 30 June 2022; Received in revised form 16 November 2022; Accepted 18 December 2022

2590-2911/© 2022 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

legislation and the application of work norms for domestic labourers contribute to prevent the exploitation of human beings (BIT, 2003).

The caring work that is practised essentially by women and young girls in households and communities is not recognized by the labour market (Schildberg, 2014). According to Dowie & de Haan (2019), women practise caring activities that are unpaid because of social norms. Those norms that assign to women the majority of domestic work and childcare in households constitute an important barrier to the economic activities of women. Melesse and O'Neill (2018) demonstrated that the heavy workload of women has consequences on their children. Sometimes, women assign domestic tasks to the children that affect their education and health. In addition, a large number of children are required to assume the responsibilities of adults. Indeed, they have to take care of their younger siblings, and take on some of their mother's tasks. Girls pay the higher price for their mother's paid work since they have to sacrifice a part of their study time.

The value of domestic work, practised essentially by women, has been ignored for too long, not only by the justice system but also by the economic system. The massive introduction of women into the labour market has not necessarily reduced the importance of their domestic work (Lippel & Bienvenu, 1995). In general, women allocate more than twice as much time to domestic tasks than men and boys (Lomazzi et al., 2018). According to the world index on the gender gap, women on average spend 5 h per day in providing care to their family, compared with one-and-a-half hours for men (OIT, 2019). Women spend more than 2 h on domestic work than men. The difference is equal to 5.7 working weeks per year (Samman et al., 2016). Only about 10% of countries worldwide apply the same rights to domestic women workers and their male counterparts. Research conducted by the Institute of Development Studies (IDS) in four countries revealed that the combination of hard work, poor pay, and the relentless demands of unpaid domestic work was exhausting household women (Eurofound, 2016). Furthermore, research reports from India showed the double load of women contributed to stress and mental health problems (Lomazzi et al., 2018).

Most women work in the informal sector. They have limited or no access to the formal work market (Ahonoukoun, 2016). In regard to child-caring services, some countries in Africa propose childcare services for infants that have not yet reached the required age to attend primary school (PNUD, 2016). These services might take many forms, including kindergartens or nurseries, day care centres, pre-school kindergartens, or home care services (PNUD, 2016).

In the absence of public services and childcare programmes within the work place, women from low-revenue households may be likely to choose to leave the work market or to pursue their professional life in the informal sector in order to combine work with child education, or else they look for an informal support network. Affordable childcare services, better infrastructure, decent work conditions and progress in the sex-specific norms are among the possible solutions to this. According to one report (OIT, 2019), 27% of women in general are counted in the active working population compared with 73% of men. This raises some questions about the opportunity costs of unpaid care work and about the evolution of norms in terms of domestic work. The unpaid work includes direct personal care, such as childcare or eldercare, as well as domestic tasks.

In the mangrove area of Ramsar site 1017 in Benin, certain activities (salt production, fish frying and smoking, market gardening) are the most important for women's livelihood provision (Adanguidi et al., 2020). Women without other adequate support mainly develop these activities. However, they have to find time to collect or buy the wood and stay near the fire for its control. Understanding how far unpaid care affects their business will help to improve their livelihood.

Recent research on the progress of the participation of women in work revealed that the reduction in childcare costs by 50% increased the number of mothers in the labour market by up to 6–10% (Gammage et al., 2019). Childcare services might be sustainable leverage for

increased participation of women in the work market. It is also important to promote understanding of the legal rights and the mechanisms that permit application of those laws that fight against discrimination and aim to establish a fair balance between men and women in terms of chances, treatment, remuneration, and representation in all fields of paid work. Therefore, the main objective of this study is to evaluate the economic independence of business women involved in salt production, fish frying and smoking, and market gardening in the mangrove area of Ramsar site 1017 in Benin through the assessment of the household types and the effects of unpaid care and social norms on these women's work.

## 2. Materials and methods

### 2.1. Study area

The study was conducted in the district of Ouidah (Fig. 1), located in the Atlantique Department of Benin. According to the fourth inventory report of 2013 (RGPH 4), the district counts 162,034 habitants. Occupations of the inhabitants include trading, catering/lodging, accounting for 32.5% and 30%, respectively, of the active population, with agriculture, fishing, and hunting accounting for 12.7%, 32.5%, and 30%. Salt production, fish frying and smoking, and market gardening are the main business activities of women (Adanguidi et al., 2020). A total of 3324 agricultural households were recorded in Ouidah, of which 89% were headed by men. Among the main agricultural activities, 95.3% of the population were involved in crop production, 2.0% in livestock production, and 1.8% in fish production. The Human Poverty Index for the district (27%) was lower than the values for other regions in the Atlantique Department (INSAE, 2016).

### 2.2. Sampling

The study focused on households involved in salt production, fish frying and smoking, and market gardening. A simple random sampling technique was used. Exhaustive lists of households involved in at least one of the named activities were prepared with the help of the chiefs of the villages/quarters. Thirty households were selected at random from the list of households in each village. In total, 300 households were surveyed; however, some inconsistencies were identified after recording the responses and so only 287 households were taken into account for the analyses.

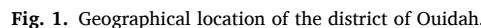
### 2.3. Data collection

Primary data collection included a questionnaire survey issued to the selected women heads of households. These data were related to the socio-economic characteristics of households, the importance of as well as the opportunity costs of unpaid care work, the demands of local services of unpaid care, and the social norms that govern women's work within households. Three categories of unpaid care were considered: (1) direct personal care, such as childcare or dependent adult care; (2) housework, such as cooking, cleaning, or collecting water or firewood; and (3) community relief work undertaken for friends, neighbours or more distant family members, and work undertaken in a spirit of responsibility to the community. The study required some secondary data that were collected in the documentation centres of the public institutions and from the internet. Those data were related to the legislation and national norms that regulate women's work in households.

### 2.4. Data analysis

#### 2.4.1. Typology of households in the study zone

The typology was performed in four steps. The first step involved selection of the relevant variables to classify the households according to their socio-economic characteristics. In the second step, a factor analysis



The groups of households were evaluated on the basis of the opportunity costs of unpaid care work executed, demands of the unpaid care, and the social norms observed in terms of the women's work in the household. The relations between opportunity costs and the well-being of the households, as well as the households' strategies to minimize the costs, were analysed. Descriptive statistics were estimated for that purpose. Comparison between groups of households was computed using the chi-squared and ANOVA One Way tests. Relationships between groups of households and work realized within the households were analysed using simple correspondence analysis (CA).

Key: JCM: Number of work days per week used by the head of the household; HCM: Number of work hours per day allocated by the head of the household; ExpM: Number of years of experience of the head of the



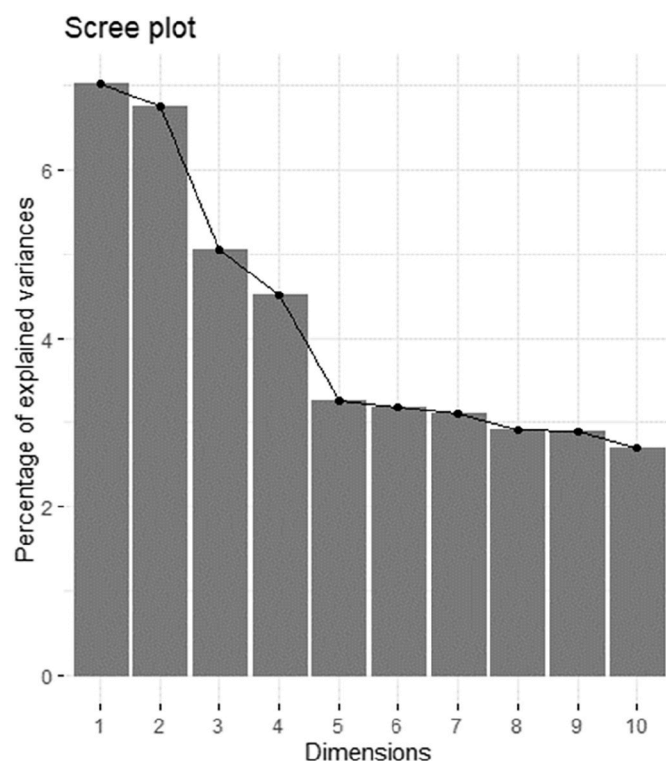


Fig. 2. Percentage of variance explained by the first 10 axes of the 26 obtained.

household; RCM: Average monthly revenue of the head of the household; JFM: Number of work days per week used by the women head of the household; HFM: Number of work hours per day used by the women head of the household; ExpF: Number of years of experience of the women head of the household; ActiviteCM: Main activity done by women head of the household; ActifFM: Idleness of the women head of the household; ActifCM: Idleness of the head of the household; Ethnie: Sociocultural group of the head of the household; RFM: Average monthly revenue of the women head of the household; ActiviteFM: Main activity carried out by the women head of the household; InstructionFM: Education level of the women head of the household; AlphaFM: Level of literacy of the women head of the household; Tmen: Total number of persons in the household; Thom: Total number of men in the household; TFem: Total number of women in the household; Smatrimonial: Marital status of the women head of the household; SexeCM: Sex of the head of the household; InstructionCM: Level of education of the head of the household; Adol: Number of adolescent girls in the household; Ado: Number of adolescent boys in the household; Adul: Number of adult men in the household; PtitE: Number of male children in the household; PtitE1: Number of female children in the household; Polygame: Marriage option of the household; AlphaCM: Literacy level of the head of the

household; NFem: Number of women head of the household.

The HAC performed on the 26 factors obtained from the FAMD, and whose eigenvalues were greater than 1, enabled the surveyed households to be classified into four distinct groups. The grouping of the households maintained an optimal inertia (Fig. 4).

The first group consisted of 138 households representing 48.08% of the total sample. It was characterized mainly by married (85.51%) and widowed (11.59%) households with monogamous status (84.06%). The household head was mainly a man (75.36%) with various levels of formal education (29.71% of primary level, 15.94% of secondary level) and literacy (19.57% reading and writing). The wife in the households of this group mainly had various levels of formal education (28.26% of primary level and 7.97% of secondary level) and literacy (14.49% of reading and writing). These households were mainly from the Peda sociocultural group (57.97%) and native to the study area (84.78%). Their main religions were Christianity (45.65%) and traditionalist (42.03%). There were few persons with disabilities (2.17%) in the households of this group (Appendix, Table 3). Both the heads of these households (94.93%) and their wives (82.61%) were mainly economically active. The main activities of both were agriculture, craft industry trade and processing. Salt production was the main activity for 33.33% of the household heads and 21.74% of their wives.

The average age of the household heads was 46.07 years. The mean size of the households was five, with about two women and three men, among whom one was a child and one youth or adolescent. The heads of the household had about 16.41 years of experience in their main activity, with 8.45 working hours per day, 5.68 working days per week, and an income of 48,220.59 West African CFA francs (XOF) per month.

The wives in the household had about 10.88 years of experience in their main activity, with 7.55 working hours per day, 4.77 working days per week, and 29,630.43 XOF of income per month.

The second group consisted of 34 households representing 11.85% of the total sample. It was characterized mainly by married households (97.06%) with polygamous status (70.59%). The household head was usually a man (97.06%) with primary school level of formal education (70.59%) and literacy (41.18% reading and writing). The wives in the households of this group mainly had primary school level of formal education (58.82%) and literacy (29.41% reading and writing). They were mainly from the Peda sociocultural group (61.76%) and native to the study area (79.41%). Their main religions were traditionalist (50%) and Christianity (44.12%). There were more persons with disabilities (14.71%) in the households of this group (Appendix, Table 3). Both the heads of the household (97.06%) and their wives (91.18%) were mainly economically active. The main activities of the household heads were salt production (26.47%) and market gardening (34.28%). The main activities of the wives were salt production (41.18%).

The mean age of the household heads was 45.65 years. The mean size of the households was ten with about five women and five men, among whom two were children and three adolescents. The heads of the household had about 16.23 years of experience in their main activity, with 6.59 working hours per day, 5.77 working days per week, and

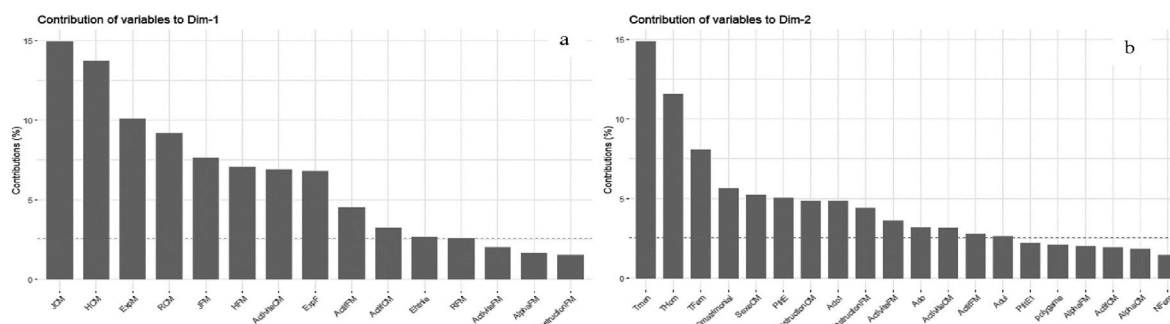


Fig. 3. Contribution of the variables to the first axis (a) and second axis (b).

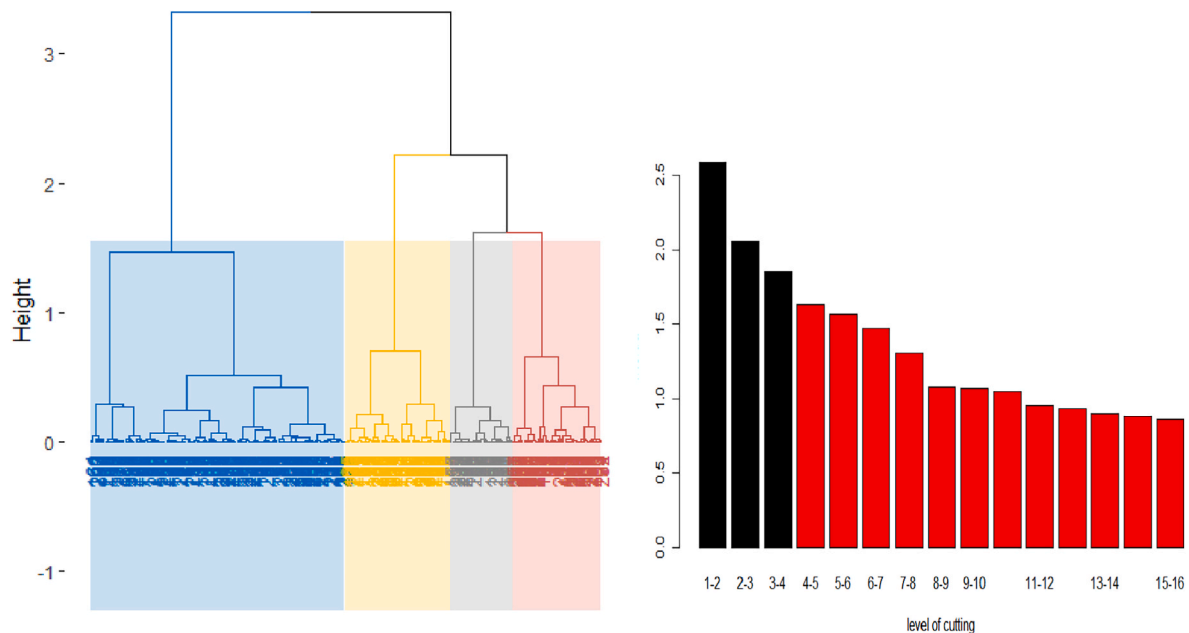


Fig. 4. Dendrogram (a) and histogram of inertia gains (b).

93,136.36 XOF of income per month.

The wives in the household had about 10.95 years of experience in their main activity, with 7.95 working hours per day, 5.26 working days per week, and 49,789.47 XOF of income per month.

The third group consisted of 55 households representing 19.16% of the total sample. It was characterized mainly by married households (92.73%) with monogamous status (89.09%). The household head was usually a man (96.36%) with various levels of formal education (38.18% secondary school level and 36.36% of primary school level) and mainly with literacy (56.36% reading and writing). The wife in the households of this group mainly had various levels of formal education (34.55% secondary school level and 30.91% of primary school level) and literacy (40.00% reading and writing). These households were mainly from the Fon (49.09%) and Peda (34.55%) sociocultural groups and mainly native to the study area (72.73%). Their main religions were Christianity (47.27%) and traditionalist (36.36%). There were few persons with disabilities (3.64%) in the households of this group. Both the heads of these households (98.18%) and their wives (98.18%) were mainly active. The main activities of the household heads were market gardening (69.09%) and salt production (25.45%), while their wives had as their main activities salt production (45.45%), market gardening (27.27%), and fish smoking (12.73%).

The mean age of the household heads was 42.80 years. The mean size of the households was five, with about two women and three men, among whom were one child and one adolescent. The household heads had about 13.57 years of experience in their main activity, with 7.45 working hours per day, 5.79 working days per week, and 60,132.08 XOF of income per month.

The wives in these households had about 11.00 years of experience in their main activity, with 8.98 working hours per day, 5.60 working days per week, and 44,854.17 XOF of income per month.

The fourth group consisted of 60 households representing 20.91% of the total sample. It was characterized mainly by married (61.67%) and widowed (25.00%) households, with either monogamous (70.00%) or polygamous status (30.00%). The households were headed by men (61.67%) or women (38.33%). The households' heads and wives were either without formal education (55.00% for the heads and 61.67% for the wives) or with primary school level education (41.67% for the heads and 35.00% for the wives). Those without literacy (71.67% for the heads and 80.00% for the wives) outnumbered those with literacy (15.00%

reading and writing for the head and 6.67% reading for the wives). These households were mainly from the Peda (66.67%) and Fon (26.67%) sociocultural groups and were mainly native to the study area (88.33%). Their main religions were traditionalist (50.00%) and Christianity (26.67%). There were few persons with disabilities (5%) in the households of this group. All the household heads were economically active, while only 43.33% of their wives were. The main activities of the heads were salt production (65.00%) and market gardening (25.00%), while the wives had as their main activities trade and fish processing (93.33%).

The mean age of the household heads was 48.72 years. The mean size of the households was four, with about two women and two men, among whom one was a child and one adolescent. The household heads had about 18.00 years of experience in their main activity, with 8.09 working hours per day, 5.40 working days per week, and 55,745.61 XOF of income per month.

The wives in these households had about 8.00 years of experience in their main activity, with 7.50 working hours per day, 3.75 working days per week, and 18,000 XOF of income per month.

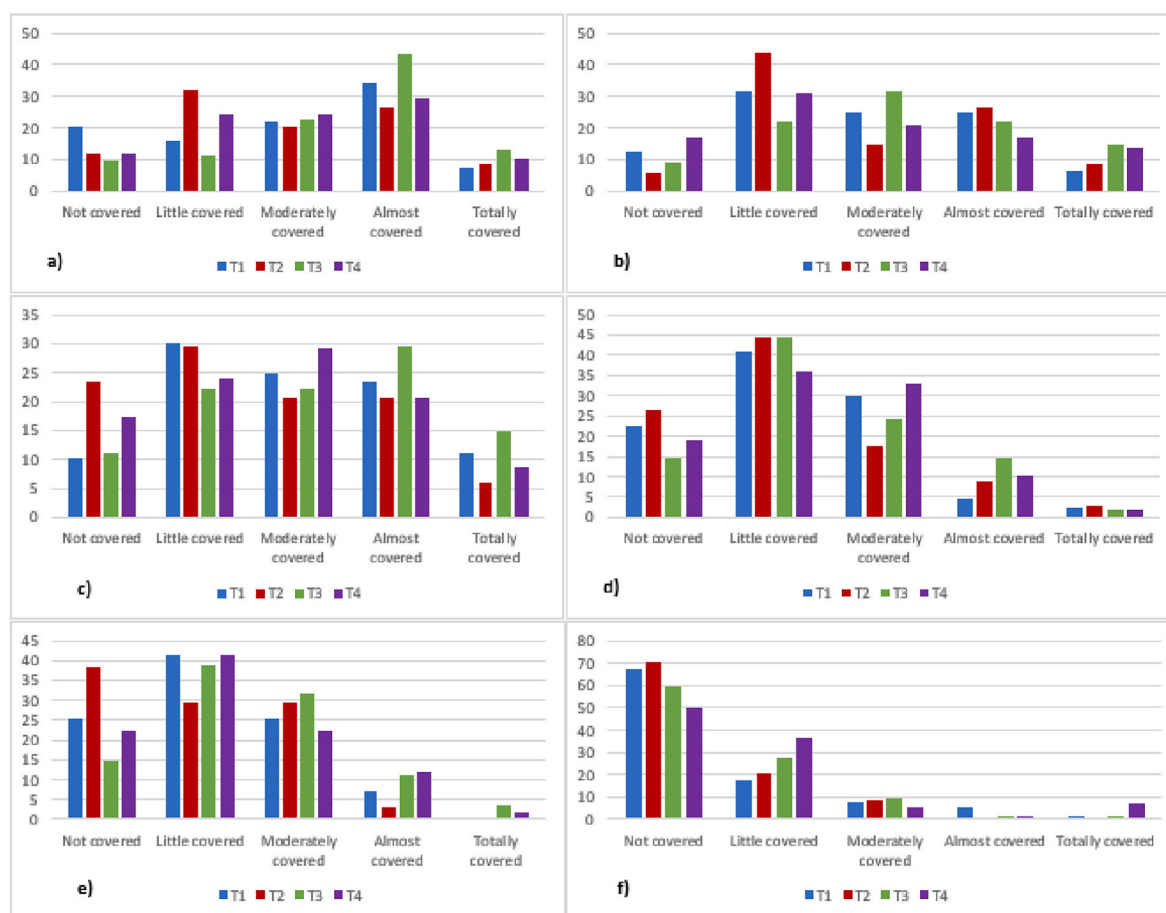
In general, the four groups of households covered almost all their needs regarding accommodation and food. Their needs for education, health, and clothing were less covered, while their needs for tontine and money saving were not covered (Fig. 5).

### 3.2. Unpaid care and social norms affecting women's work

#### 3.2.1. Unpaid care

The results of the correspondence analysis (CA) on the unpaid care tasks (Fig. 6) indicated that direct personal care (childcare or dependent adult care) had high association with household groups 1 and 4 (Fig. 6a). Thus, these groups of households were dependent on this unpaid care. Regarding housework (Fig. 6b), cooking and cleaning were the important activities for household groups 1 and 4, while laundry was the most important for group 2. Water collection was an important activity for group 3. With regard to the tasks related to community support, assistance to persons in need was the most important for household group 1, while support for elders was the most important for group 2. Maintenance of the environment was the most important for groups 3 and 4 (Fig. 6c).

Regardless of household type in the study area, the involvement of



**Fig. 5.** Coverage rate of household needs in (a) accommodation, (b) education, (c) food, (d) health care, (e) clothing, and (f) tontine and money saving. Key: T1: Group 1; T2: Group 2; T3: Group 3; T4: Group 4.

members was justified mostly by the fact that these tasks were considered as mandatory for the children and women in the household (Fig. 7). That justification was supported mostly by household group 1. Being alone or available in a household were among other reasons behind involvement in these tasks, especially for groups 1 and 4.

Payment for the care tasks varied among the household groups ( $\chi^2 = 0.02$ ,  $P$  value = 0.90, Table 1). None of the household members in group 2 received payment for care works. On average, 5% of the respondents in group 4 paid those in charge of care works in their household (Fig. 8a). The necessity of paying for these tasks also varied among household groups ( $\chi^2 = 0.15$ ,  $P$  value = 0.66, Table 1): 11.76% and 13.33% of respondents from groups 2 and 4, respectively, thought that the care tasks carried out in their households should be paid.

The lowest estimation of the monthly payment for care works was observed in group 1, while the highest estimation was noted in group 4 (Fig. 8a). If those in charge of the unpaid care tasks in the households had income-generating activities, these could provide members of groups 1, 2, 3, and 4, respectively, with an average 23,400 XOF, 0 XOF, 85,769 XOF, and 19,000 XOF (Fig. 8a). Trading was mentioned as the main activity that could be carried out by members from all of the households (Fig. 8b).

Rmr: Monthly required recommendation; Cotm: Opportunity cost of the house tasks; Com: Trading; Transf: Transformation; Elev: Livestock farming; Mar: Market gardening.

### 3.2.2. Unpaid care services and traditional norms affecting women's work

The situation of direct personal care (childcare) for households in the study area (Table 2) revealed that groups 2 (8.8%) and 1 (2.2%) recognized the existence of traditional childcare unpaid services.

Household group 2 expended the highest monthly average time on childcare (189 h 31 min). Group 3 spent a monthly average of 12,000 XOF on childcare services, which was approximately three times of the expenditure in groups 1 and 4. There is a statistically significant difference between household types.

A variety of reasons were used to justify the care requirements in the different types of households. For example, the frying and smoking activities (of fish and shrimp) and salt production constituted the main reasons that household group 1 requested childcare services (Fig. 9a). Farming work was the second reason for the demand of childcare observed in group 2 (Fig. 9a). Group 1 requested adult care in order to attend ceremonies (Fig. 9b).

The childcare services were requested from the household family's members, neighbouring households, or friends (Fig. 10a). Groups 1, 2, and 4 entrusted this service more to the members of their own family, while household group 1 also entrusted this service to their in-laws (Fig. 10a). Adult care was entrusted to neighbouring households or to friends (Fig. 10b).

Among the traditional norms affecting women's work in the study area was the expectation that 'hard' work (coconut harvesting, moto riding, basket lixiviation, palisade construction, fishing) was for men (25.6% of the respondents), and that men should not conduct women's work (water collection, cooking, washing, and cleaning). Additionally, women were expected to take care of the family and conduct domestic works in a timely manner without complaining to their husbands (17.1%). A pregnant or breastfeeding woman should not cook meals (6.8%). Male household heads should not participate in food distribution at ceremonies (5.1%). Only women were authorized to visit a household where a baby had been born (3.4%). In the presence of his

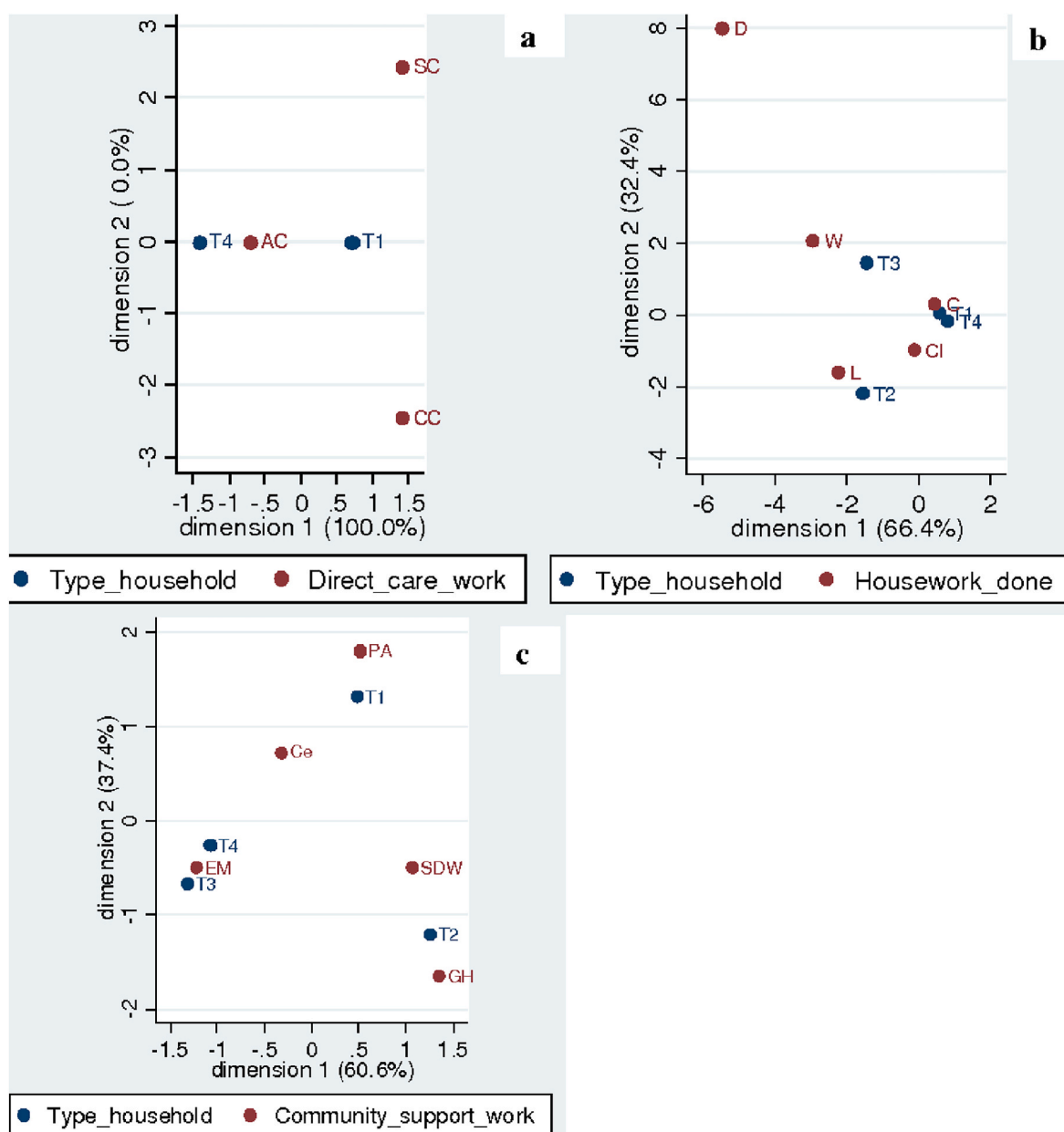


Fig. 6. Correspondence analysis between the groups of households and (a) direct personal care, (b) housework, and (c) community support work.

Key: T1: Group 1; T2: Group 2; T3: Group 3; T4: Group 4; AC: Adult care; CC: Childcare; SC: Health care; W: Water collection; D: dishwashing; C: Cooking; Cl: Cleaning; L: Laundry; PA: Assistance to persons in need; F: Funeral; SDW: Soil collection and water drawing; Ce: Ceremony; GH: Support to grandparents; EM: Environment maintenance.

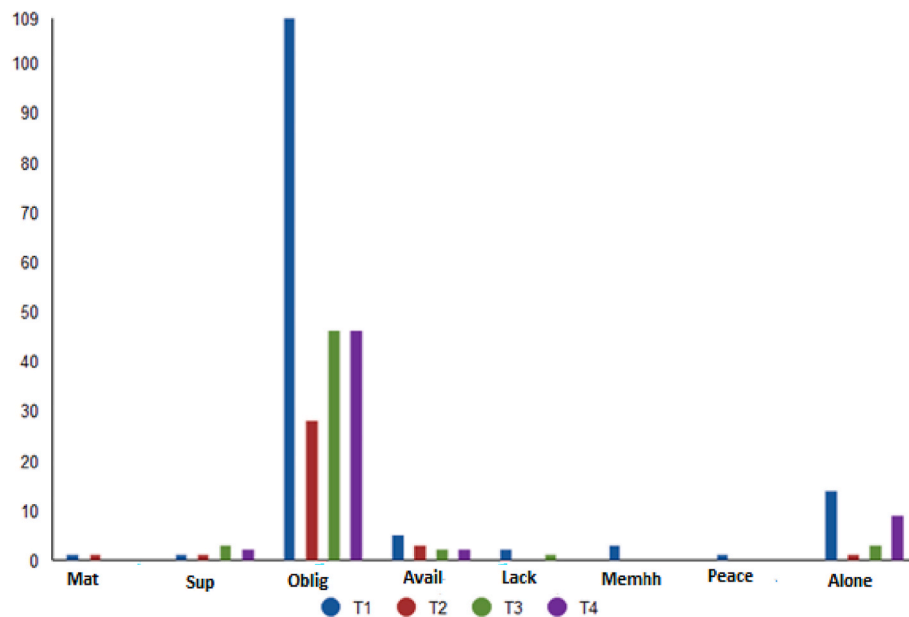
wife, the husband should not sweep, nor take care of children, nor do washing (3.4%). After giving birth, a woman should rest for three months (1.7%). All four groups of households perceived that the traditional norms contributed to the well-being of the households ( $\chi^2 = 70.83$ ,  $P$  value = 0.001). Groups 1 and 2 perceived more that the caring tasks were only for women. Furthermore, the social norms that stipulated that hard work was reserved for men and that men must not interfere with women's work (water collection, cooking, washing, and cleaning) were observed in all four types of households. However, the norm that the husband should not sweep, nor take care of the children, nor wash clothes in the presence of his wife was absent in group 3. The members of groups 2 and 4 did not believe that pregnant or breast-feeding women should not prepare food (Fig. 11).

#### 4. Discussion

##### 4.1. Socio-economic characteristics of the households and their coverage needs

Household size, religion, gender, marital status, ethnicity, education, occupation status, income, respondent age, family patterns, and resident tenure type (or system) are essential socio-economic characteristics that affect the housing condition, the positions of people in society, occupational status and other resources (Jiboye, 2004; Jiboye & Ogunshakin, 2010; Kayode et al., 2021). Therefore, human needs for housing are not simply inherent; instead, housing needs are developed within a socio-economic context (King, 1976). The individual socio-economic characteristic has a strong influence on their housing (Hall & Soskice, 2001). Suppose it is to fully appreciate the essence of a house in the





**Fig. 7.** Reasons for members' involvement in care works.

Key: T1: Group 1; T2: Group 2; T3: Group 3; T4: Group 4; Mat: Maturity; Sup: Support; Oblig: Obligation; Avail: Availability; Lack: Lack of financial resources; Memhh: Member of the household; Peace: Peace in the household; Alone: Alone.

**Table 1**

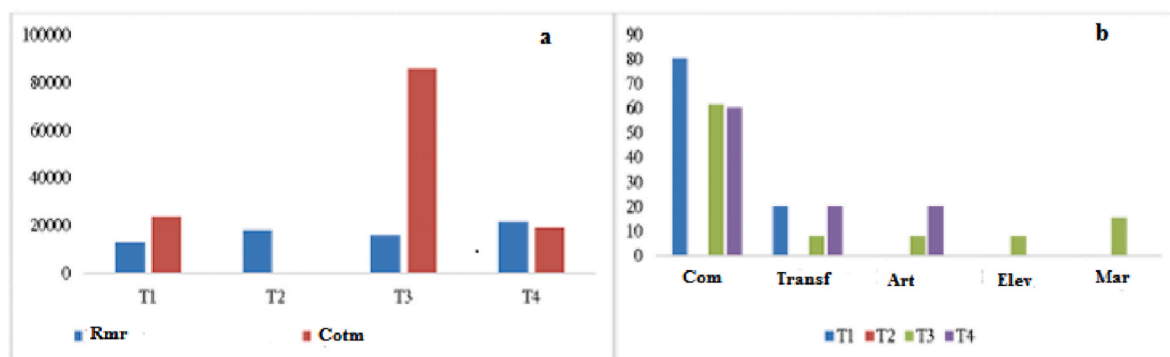
Comparison of the types of households with regard to payment for care work.

		Group 1	Group 2	Group 3	Group 4	Chi <sup>2</sup> (P value)
Payment for care work	Yes	0.72	0	3.64	5	0.02
	No	99.28	100	96.36	95	(0.90)
Necessity of payment for work	Yes	8.70	11.76	10.91	13.33	0.15
	No	91.30	88.24	89.09	86.67	(0.66)

context of human habitation. The relationship between socio-economic characteristics and housing must be considered (Olayiwola et al., 2009). Each country in the world sees the financial well-being and socioeconomic status of households as essential elements in national development by the Economic Planning Unit (EPU, 2021; Munisamy, Sahid, & Hussin, 2022a, 2022b). The analysis of the socio-economic characteristics of the four identified groups showed that the majority were married and monogamous households. In fact, Ouidah has a mixture of ethnic groups among its habitants. The introduction of European and African American cultures in the region may have changed the mindset of the household heads to preferring the monogamous system over

polygamy. In addition, communication about the advantages of monogamy may have contributed to that mindset change. The advantages commonly reported include: lower rates of crime, personal abuse, intra-household conflict, and reproduction, and greater parental investment (especially male), economic productivity (increased gross domestic product per capita), and female equality (Henrich et al., 2012). Much body of empirical research has been conducted over the years on housing conditions and their effects on individuals (Jiboye, 2010). Researchers in fields from biology to history have long examined the puzzle of monogamous marriage, and have suggested that such norms spread because of the group beneficial effects (Alexander, 1987; Scheidel, 2009). Researchers in the field glommed 'ethnicity' and tried to define and describe it differently in various ways. These include a distinctive marker of the communal legacy of a community that is shared and passed down over the generations (Bradley, 2016). The sociocultural groups investigated in this study included Peda and Fon natives in all household types. Indeed, Ouidah was originally occupied by Peda (the first natives), but the Fon ethnic group colonised the district through slavery and immigration. Therefore, the percentage of Fon and Peda in the different households revealed the general population statistics (INSEA, 2016).

Men were older and more experienced than the wives in the four



**Fig. 8.** (a) Monthly payment and opportunity costs; (b) lucrative activities that could be carried out by the person in charge of care works in the household.

Key: T1: Group 1; T2: Group 2; T3: Group 3; T4: Group 4.

**Table 2**  
Practices of childcare.

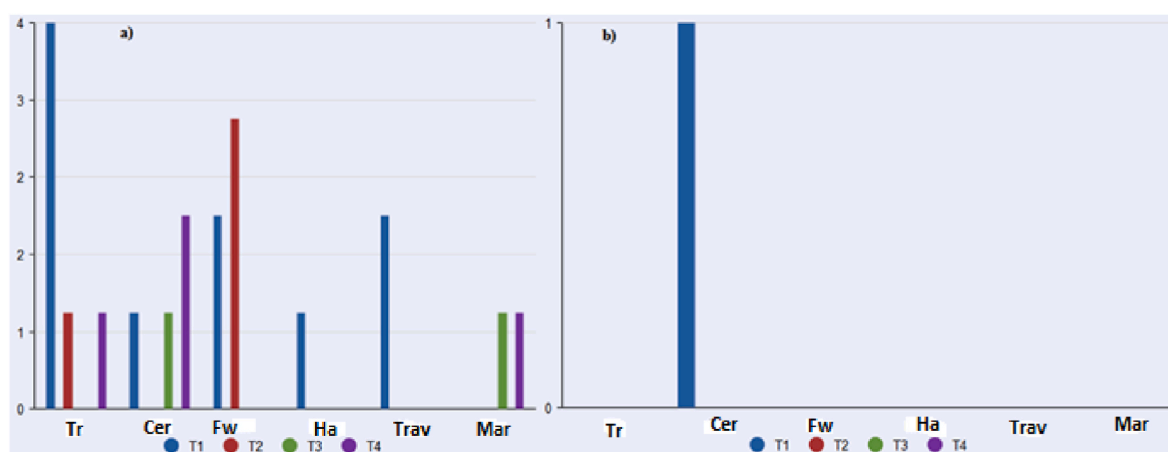
Household type	Traditional practice of childcare in the area		Monthly time for childcare	Monthly cost paid for childcare (XOF)
	Yes	No		
1	3 (2.2%)	135 (97.8%)	7.88 ± 27.85	3087.50 ± 2308.82
2	3 (8.8%)	31 (91.2%)	230.14 ± 1086.72	12000.00 ± 6803.36
3	0 (0%)	55 (100%)	1.69 ± 7.68	12000
4	1 (1.7%)	59 (98.3%)	9.19 ± 42.48	4000 ± 3000.00
Test	Chi <sup>2</sup> (3) = 7,39, p = 0,06		F(3, 283) = 2,95, p = 0,03	F(3, 11) = 2,74, p = 0,094

household groups, which could be explained by the fact that men in Benin culture marry younger women. The years of experience may thus relate positively to their ages. However, young wives are more likely to do housework and depend on their husbands, and only really start doing financially productive work when the children are free to take of themselves. From that moment, the wives shared housework activities with their daughters, and entered into financially productive work. As a

result, household housing tasks and demand is linked to the age of individuals as reported by [Clark and Dieleman \(2017\)](#); [Kayode et al. \(2021\)](#).

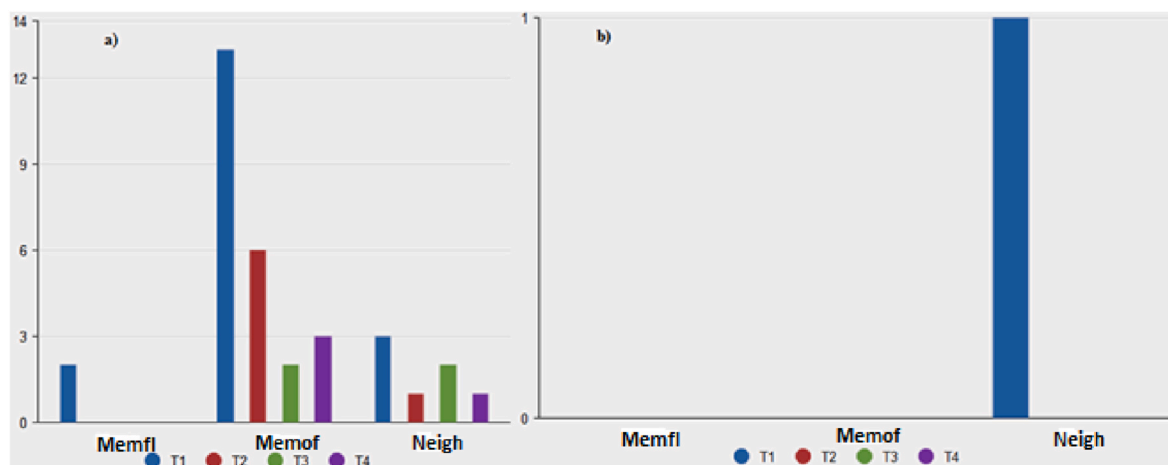
The highest proportion of persons with disabilities was in the second group, with under 15% of household members, while the fourth group counted for 5% and the others were less. In each household type, people cared more about these family members and, in most cases, they were cared for also by members of community and especially the extended family. A greater proportion of disabled persons in the household may impose a larger burden on the resident women. The care of persons with disabilities in the household is part of the assistance to person in danger of Benin law no 2018-16 of penal code in its article 704 that stipulates the conditions for assistance to persons with disabilities in a household.

Traditionalist religions and Christianity were both adopted in all types of household. From a theological view-point, religion is concerned with social and individual conduct models that help believers organise their daily lives ([Alanamu, 2004](#)). [Inglehart and Norris \(2010\)](#) argue that religion influence gender fairness through a variety of mechanisms including socialisation of ethical values and norm, and emphasis on separate spheres of conscientiousness where women hold familiar roles and are subordinate, and through political activities. Religious identity is more critical than ethnic identity and serves to activate ethnicity ([Kayode et al., 2021](#)). The district of Ouidah is one of the exceptional regions in Benin where traditionalist religions and Christianity



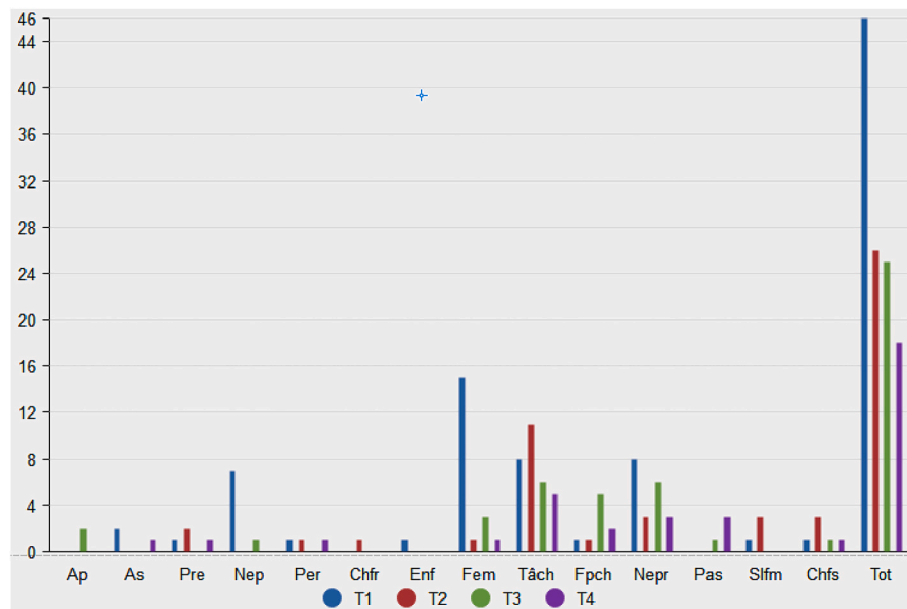
**Fig. 9.** Reasons for requesting (a) childcare and (b) adult care.

Key: T1: Group 1; T2: Group 2; T3: Group 3; T4: Group 4; Tr: Transformation (of fish and shrimp) and salt production; Cer: Ceremony; Fw: Farming work; Ha: House activities; Tra: Travel; Mar: Market.



**Fig. 10.** Persons in charge of (a) childcare and (b) adult care.

Key: T1: Group 1; T2: Group 2; T3: Group 3; T4: Group 4; Memfl: In-laws family member; Memof: Own family member; Neigh: Neighbouring households or friends.



**Fig. 11.** Comparison of the social norms between types of households

T1: household 1; T2: household 2; T3: household 3; T4: household 4; Ap: After giving birth, a woman stay close for 3 months; As: Assistance and old persons care; Pre: In the presence of the wife, the head of the household (man) should not sweep, not take care of the children, not wash cloths; Nep: The pregnant woman or a breastfeeding women should prepare food; Per: The old person should not participate to the community support works, nor to the public works; Chfr: The head of the household should not participate to the soil collection for construction; Enf: Children should help their parents; Fem: Women take care of the family and conduct domestic works in time without offending verbally her husband; Tâch: The hard works are for men who should not be involved in the women's works (water collection, cooking, washing and cleaning); Fpch: None should collect the branches of mangroves especially the red ones for fire and should not catch fish in the Vodoun river; Nepr: No water collection and sweeping after 7PM; Pas: No activity on the Zogbodo day and community works on the market day; Slfm: Only women are able to visit a household in which there is new baby born; Chfs: Un household chief should participate to the services during a ceremony and are the only ones to participate to the funerals; Tot: Total. (For interpretation of

the references to colour in this figure legend, the reader is referred to the Web version of this article.)

cooperate in solving household members' issues and needs. The presence of the main Catholic church and the Pythons Temple in Ouidah is a proof of that cooperation. Therefore, finding both traditional religion and Christianity practised in the same household is not surprising. In most households, the head can be traditionalist and his wife a Christian, or vice-versa.

Women felt less the effects of social norms on their daily activities, although social norms may trail behind the benefits that have been made in women's economic equality (Campaña, 2018). In other cases, traditional gender roles impose constraints and reduce women's competitiveness (Malta et al., 2021). A 'traditional' gender ideology would support a clear separation of tasks by gender. Women are dedicated to housework and childcare, while men are dedicated to work outside the domestic sphere, in the labour market (Lomazzi et al., 2018). Thus, much unpaid care work is done entirely because of the constraints imposed by cultural norms, lack of infrastructure, lack of alternative public services, etc. (Alonso et al., 2019, pp. 1–35). In contrast, the Article 30 of the Beninese Constitution stipulates that "The State recognizes the right of all citizens to work and strives to create the conditions which make the enjoyment of this right effective and guarantee the worker fair compensation for his services or its production". Therefore the equity in access to the work market should be used by the households members to facility the access of women to the work market.

Men were more educated and literate than their wives in all types of households. Thus, there were lower educational enrolment rates for girls in the area of study. Early marriage and early childbearing may be the reasons that girls drop out of school, leading to work in low-paying sectors. This situation keeps generations of women at the same level of education or worse. For Malta et al. (2021), educating future mothers improves not only individual employment opportunities but also health, cognitive skills, grades, educational attainment, and future employment opportunities for children. Women are more likely than men to invest a large proportion of their household income in educating their children. The levels of education are positively correlated with household dependency on informal sectors. Informal jobs are disproportionately held by low-experienced workers with no or little formal education (Malta et al., 2021). Alonso et al. (2019, pp. 1–35) found that only those women with some level of higher education substitute unpaid work with paid

work. The unpaid work obligations of women seem to negatively affect their labour supply, and sometimes lead to poorer education (Campaña, 2018).

The mean household size ranged from four (group 4) to ten (group 2) and was associated with more time in total work for women (Campaña, 2018). Adebisi et al. (2018) observed that "as the size of households declines, participation in community development activities rises and reinforces past perceptions that community members with small household sizes will participate more than large households due to the heavier burden of household maintenance". In consequence, the members of household type 4 will be more active on the labour market than other groups members. The results showed that the majority of household heads in the area of study were men. It can be noted that women participated more in the labour market as more members of the household became independent, and that those women who had finished giving birth in some households were more involved in production activities, if they did not have impaired mobility. The greater the household size, the more the dependency ratio increased. According to Campaña (2018, pp. 1–26), higher dependency ratios may increase the gender gap in total work. Both household heads and their wives were mainly economically active in all households. For household types 2 and 3, women were more involved than men in salt activities. The household heads earned more income than the wives in all households. In general, women's incomes were still below those of men due to gender norms and roles (Lomazzi et al., 2018). Greater gaps in labour force participation and entrepreneurship rates between men and women are likely to result in further inequality of earnings between sexes, creating and exacerbating income inequality (Kochhar et al., 2016). Also, there was a gap in the working hours per day and per week for both sexes. In this area, women spent their remaining time in shouldering a higher share of unpaid work within the household, including childcare and household tasks. Following Kochhar et al. (2016), women spent more hours each day in this way, regardless of the employment status of their husband. This may result in the disparity between labour market and household work, and women's lower earning potential. It is only in household group 4 that women spent more working hours per day than men, but still they earned less income. Additionally in this group, women did not have salt production as their main activity, but trade and fish processing.

They were overrepresented in informal activities that could not generate more significant income. This aspect may concern widowed or single women, who struggle to provide food for the table. Naranjo (2018) found that self-employed mothers devoted less time to paid work and more time to unpaid work and childcare compared to employed mothers.

Housing is defined as “the process of providing adequate physical infrastructure and social amenities (services) to a large number of residential buildings permanently in planned, decent, healthy and sanitary communities to meet the basic and special needs of the population” (Ogundahunsi & Adejuwon, 2014; Kayode et al., 2021). Several variables have been highlighted to have significantly contributed to housing, including socio-economic status, income status, consumer education level (Kayode et al., 2021). The four groups identified in this study could not properly cover their needs on education, health, and clothing, all important assets for both home and market production. They lacked funds to invest or to maintain activities since they could not save money. The results justified the conclusion that women are more likely than men to be illiterate and poor (Kochhar et al., 2016). More access to financial services would enhance women’s income-generating ability and increase their power within the household (Kochhar et al., 2016). They would be more able to save and invest in education and diversified activities. High levels of inequality are an obstacle to poverty reduction and both must be considered as interconnected parts of the same problem in this area of study (UNRISD, 2010).

#### 4.2. Unpaid care and social norm impacts on women’s work

The data collected during the survey related to the socio-demographic characteristics that consider gender, ethnicity, main activity, education level, and household size. Gender-sensitive research has become an important way to examine household life and thus contributes towards making important changes in society. The concept of gender equality is multidimensional and covers different spheres of our social life (Grunow et al., 2018; Lomazzi et al., 2018). The domain of work–family balance has always been a crucial one (Lomazzi et al., 2018; Crespi & Lomazzi, 2018). Men and women alike face the issue of balancing professional duties and family responsibilities. They must combine the needs of taking care of family members with the necessity of paid work. Many arrangements are defined by the men and women within couples to balance such differing responsibilities. However, many other elements come into play, including availability of resources and personal preferences, cultural context, and the institutional setting for opportunities that contribute to establishing individual work–life balance strategies and, more generally, the gender contract between partners (Lomazzi et al., 2018).

Among the work–life balance strategies within a family, there is the work that includes all domestic and garden tasks, normally realized at home by a person who is a family member to facilitate day-to-day life management and personal needs. The average level of revenue gained by the household heads and their family members in the type 1 and 4 groups as presented in this study could not enable them to use paid care or recruit childcare workers. The high level of similarity identified between households in groups 1 and 4 was confirmed by the high association between them and childcare services. The monogamous marital regime of household types 1 and 4 is characteristic of Fon, Pedá, and Xwla sociocultural groups (INSAE, 2016). Despite the low level of the household revenue, the highest estimation of monthly payment for care works was observed in household type 4. In contrast to groups 1 and 4, the heads of the type 2 and 3 households and their wives gained more revenue per month through salt production, fish frying and smoking, and they were more educated. This was confirmed by the high monthly average time of childcare (230 h 8 min) in household type 2 observed in this study. The number of household members who were economically active, coupled with the revenue and education levels of both the heads and their wives, made them more likely to be seeking paid care services.

The importance of women’s role in African societies is increasingly recognized and receiving more attention from many stakeholders (Atchade, 2021; Pilon, 1996). Understanding the allocation of resources and responsibilities in the household is essential for predicting the effects of policies and the impact of development projects (Rogers, 1983). The literature on intra-household negotiation and resource allocation is strongly related to the revealed preferences approach for making predictions on the allocation of tasks within families (Bethmann & Rudolf, 2015). Therefore, the different characteristics of the types of households identified in the present study are of importance for designing appropriate policies and strategies to reduce the gender gap and eliminate poverty in rural areas such as Ouidah.

While the work related to community support and assistance to persons in need was the most important for household type 1, soil collection, water drawing, and support to older parents were the most important for household type 2, and the maintenance of the environment was the most important for household types 3 and 4. These differences could be due to the number of active members of each group, the main activities of the heads of these households and their wives, and their respective needs, since the involvement of members in those activities that are unpaid is seen as mandatory for the children and the women in the households. In fact, women throughout the world bear the primary responsibility for unpaid care work, which includes housework and taking care of people at home and in communities for no explicit monetary reward, as reported by Xiao-Yuan and Xinli (2015). Unpaid care work is essential to enabling human capabilities and well-being. Through its contribution to human and social capital formation, unpaid care work also plays a pivotal role in generating and sustaining economic growth (Folbre and Nelson, 2000; Xiao-Yuan & Xinli, 2015).

The lack of knowledge about childcare enterprise in the study area is because both the formal childcare services are scarce and most of the households are used to domestic childcare arrangements. Many reasons might be used to justify a request for childcare and adult care services among the household types, including the frying and smoking activities (of fish and shrimp), and salt production and farming works (e.g. household type 2). Those care services are requested when the women in the households are occupied with other paid work. As more and more women enter the labour force, their domestic tasks are delegated to household employees on whom the well-being of all generations of the family depend (D’Souza, 2010). As domestic work allows other women workers with family responsibilities to achieve equilibrium between work and family life, it plays a key role in the smooth functioning of the economy (D’Souza, 2010). In this study, all of the households’ requests for childcare services were from their family members and neighbouring households or friends because they constitute an unpaid service. However, this type of domestic work should not be considered as a substitute for the provision of formal care. There is certainly a need for greater public investment in the care economy, so that families can choose between institutional care and provision of the necessary services through qualified household employees, as recommended by D’Souza (2010). Despite the advances in gender equity, domestic work is still largely carried out by women. Domestic work is an avenue of employment for poor rural women who have had little access to education, are often from marginalized ethnic groups, and those with otherwise low employability. Traditionally, it is the most widespread form of transfer of resources from the rich to the poor and could, if performed under fair working conditions, make a vital contribution to poverty alleviation. However, in Benin, the conditions of this unpaid labour are regulated by many norms that enforce women and children to execute some activities in the household without requesting payment. In addition, these norms indicate that some activities should not be performed by men, since they are considered the chief of the family. Despite the aspects of this that may be considered negative by educated people from outside the household types, the members of the households recognized that the application of social or traditional norms contributed to the well-being of the household, and this was particularly true in group 2.



The greater prevalence of women in part-time work arrangements is one of the key drivers of observed gender wage gaps, creating a feedback loop for gender inequality in unpaid work (Blau & Kahn, 2017). In order to recognize gender inequality in unpaid work, the proportion of time spent on such tasks disaggregated by gender is one of the key indicators under the Sustainable Development Goals (SDGs) that may be identified to help boost labour force participation by women (Alonso et al., 2019, pp. 1–35).

This study has also revealed that the time allocated to this work by women decreases with increased coverage of the households' needs and the education level of women in the household. Therefore, there is a need to educate and empower women to become involved in the labour market in order to contribute to the well-being of families and society in developing countries. The results of this study followed the theory of the allocation of time and human capital of theoreticians who demonstrated the importance of time in household production and consumption. In Becker's theory, households combine time and market goods via their production function to produce commodities which are chosen to maximize their utility function (Becker, 1965). For Becker, women's specialisation in unpaid household work leads to their low pay in the market economy. Women's biological role in child-bearing is one of small differences between men and women, with profound consequences for women's participation in that market (Becker, 1965). Women work longer hours than men because of the significant quantities of housework and care work that they do as well as other types of work (Jefferson & King, 2001). The concept of household definition for this study is in line of Reid (1977); who defined it as the set of all unpaid activities undertaken by and for household members. These all unpaid activities could be replaced by goods and services purchased in the market, i.e. they can be delegated to somebody outside the household group. Elmer (1935) argued that any unpaid work should be considered 'productive' and be part of the economy (Whittle, 2019), if it was delegated. This study shaped this pattern, by considering household as production household which can contribute to the productivity of women in labour market. Hence, housework in household is understood as 'productive consumption' which prepares goods for use within the home, in the model of Jan de Vries. (Jan de Vries, 1950). This guides the study to take into account the activities in the households. According to Coulson et al. (1975) and Beechey (1977), women who are trapped in domestic drudgery, supplying at very low levels of productivity goods and services that could be provided much more efficiently by the market, are not available for exploitation as wage labourers. It is noted that women's unpaid housework reduces the value of male labour power since it provides essential inputs free or greatly below cost (Wolpe, 1972; Beechey, 1977; Gardiner, 1975). The study disagreed with neo-classical theorists who argue that women's lower incomes and restricted access to economic resources are a result of their choice to pursue activities that offer noneconomic returns. (Hyman, 1994; Simon Duncan and Rosalind Edwards, 1997). They fail to not consider social norms in the rural area. Thus, the study focused on social norms as the limits of what can be negotiated between men and women; and they determine the level of bargaining power of each one, and affect the manner in which the negotiating process can take place (the rules and modalities of the negotiation (Ventura-Dias, 2011). For Engels (1884), socio-economical factors affect labor division were considered in the work. The households were classified according the factors and conclusion has been made.

## 5. Conclusions

This study assessed the unpaid care services carried out by women

and the evolution of norms in terms of domestic work in households where women were involved in salt production, fish frying and smoking, and market gardening in Ramsar site 1017 in Benin. The study identified four types of households with specific characteristics. The majority (75%) of the households' basic needs were generally covered. Payment for domestic works varied from one household to another. Most of the household types entrusted their children's care to family members. Childcare and eldercare, as well as other domestic tasks, were assigned to women according to the social norms. This study has also revealed that the time allocated to this work by women decreased with the increased coverage of the households' needs and the education level of the women in the household. However, if the domestic works were fairly rewarded, the needs of the family could be fully covered. There is a need to educate and empower women to become involved in the labour market in order to contribute to the well-being of families and society in developing countries. More access to financial services would enhance women's income-generating ability and increase their power within the household. The different characteristics of the types of households identified in the present study are of importance for designing appropriate policies and strategies to reduce the gender gap and eliminate poverty in rural areas in Benin. Future research should focus on the factors determining time allocation to childcare activities and houseworks in mangrove areas for equal time management among men and women in the households for food security and the well-being of the families in Benin.

## Funding

This work was carried out with a grant (IDRC No. 109625-001) from the International Development Research Centre, based in Ottawa, Canada.

## Data availability statement

The data presented in this study are available on request from the corresponding author.

## CRediT authorship contribution statement

**Elie A. Padonou:** Conceptualization, Resources, Supervision, Project administration, Funding acquisition. **Carolle M.A. Avocevou-Ayisso:** Conceptualization, Formal analysis. **Murielle Zanou:** Methodology, Validation, Investigation, Writing – review & editing, Visualization. **Maxime M. Obe:** Methodology, Software, Formal analysis, Investigation, Writing – review & editing, Data curation. **Symphorien Agbahoungba:** Validation, Writing – original draft, Writing – review & editing. **Brice Sinsin:** Project administration, Funding acquisition.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Acknowledgments

The authors acknowledged the local population of the district of Ouidah for their supports during the data collection phase.

## Appendix A

Table 3

Characteristics of the four identified household types.

Qualitative variables		Household group								$\chi^2$	Test V (Cramer)					
		1		2		3		4								
		No.	Freq. (%)	No.	Freq. (%)	No.	Freq. (%)	No.	Freq. (%)							
Proportion of total sample		138	48.08	34	11.85	55	19.16	60	20.91							
Matrimonial situation	Divorced	0	0.00	0	0.00	1	1.82	2	3.33	33.42***	0.197					
	Married <sup>b, c, d</sup>	118	85.51	33	97.06	51	92.73	37	61.67							
	Separated <sup>d</sup>	4	2.90	1	2.94	2	3.64	6	10.00							
	Widowed <sup>b, c, d</sup>	16	11.59	0	0.00	1	1.82	15	25.00							
Sex of CH	Woman <sup>b, c, d</sup>	34	24.64	1	2.94	2	3.64	23	38.33	28.74***	0.316					
	Man <sup>b, c, d</sup>	104	75.36	33	97.06	53	96.36	37	61.67							
Matrimonial system	Monogamous <sup>a, b, c</sup>	116	84.06	10	29.41	49	89.09	42	70.00	51.13***	0.422					
	Polygamous <sup>a, b, c</sup>	22	15.94	24	70.59	6	10.91	18	30.00							
Level of education of CH	None <sup>a, b, c, d</sup>	73	52.90	6	17.65	13	23.64	33	55.00	51.56***	0.245					
	Primary <sup>a, b</sup>	41	29.71	24	70.59	20	36.36	25	41.67							
	Secondary <sup>c, d</sup>	22	15.94	4	11.76	21	38.18	1	1.67							
	University	2	1.45	0	0.00	1	1.82	1	1.67							
Level of education of WH	None <sup>a, b</sup>	87 <sup>a</sup>	63.04	8	23.53	18	32.73	37	61.67	58.64***	0.261					
	Primary <sup>b</sup>	39	28.26	20	58.82	17	30.91	21	35.00							
	Secondary <sup>c, d</sup>	11	7.97	6	17.65	19	34.55	1	1.67							
	University	1	0.72	0	0.00	1	1.82	1	1.67							
Literacy of CH	None <sup>a, c</sup>	98	71.01	20	58.82	17	30.91	43	71.67	41.77***	0.22					
	Write	2	1.45	0	0.00	2	3.64	1	1.67							
	Read <sup>b</sup>	11	7.97	0	0.00	5	9.09	7	11.67							
	Read and write <sup>a, c, d</sup>	27	19.57	14	41.18	31	56.36	9	15.00							
Literacy of WH	None <sup>a, c</sup>	112	81.16	23	67.65	21	38.18	48	80.00	49.14***	0.239					
	Write	1	0.72	0	0.00	2	3.64	0	0.00							
	Read <sup>a, c</sup>	5	3.62	1	2.94	10	18.18	8	13.33							
	Read and write <sup>a, c, d</sup>	20	14.49	10	29.41	22	40.00	4	6.67							
Sociocultural group	Adja	2	1.45	0	0.00	1	1.82	0	0.00	51.58*	0.245					
	Fon <sup>a, c</sup>	28	20.29	6	17.65	27	49.09	16	26.67							
	Kete	0	0.00	0	0.00	1	1.82	0	0.00							
	Kotafon	0	0.00	0	0.00	0	0.00	1	1.67							
	Nago	1	0.72	1	2.94	0	0.00	0	0.00							
	Peda <sup>c</sup>	80	57.97	21	61.76	19	34.55	40	66.67							
	Sahoue	2	1.45	0	0.00	0	0.00	0	0.00							
	Toffi	0	0.00	0	0.00	1	1.82	0	0.00							
	Toli	0	0.00	1	2.94	0	0.00	1	1.67							
	Xwla <sup>a, d</sup>	23	16.67	5	14.71	6	10.91	2	3.33							
	Non-native <sup>c</sup>	21	15.22	7	20.59	15	27.27	7	11.67							
	Native <sup>c</sup>	117	84.78	27	79.41	40	72.73	53	88.33							
	Religion	Traditionalist	58	42.03	17	50.00	20	36.36	30			50.00	17.91*	0.144		
		Christianity <sup>d</sup>	63	45.65	15	44.12	26	47.27	16			26.67				
Muslim <sup>a</sup>		0	0.00	0	0.00	3	5.45	2	3.33							
Unbeliever		17	12.32	2	5.88	6	10.91	12	20.00							
Disability in the household	No <sup>b</sup>	135	97.83	29	85.29	53	96.36	57	95.00	10.04*	0.187					
	Yes <sup>b</sup>	3	2.17	5	14.71	2	3.64	3	5.00							
Type of disability in the household	None	135	97.83	29	85.29	53	96.36	57	95.00	39.99	0.216					
	Amputee	1	0.72	0	0.00	0	0.00	0	0.00							
	Lame	0	0.00	0	0.00	1	1.82	0	0.00							
	Epileptic	0	0.00	0	0.00	0	0.00	1	1.67							
	Hard of hearing	0	0.00	1	2.94	0	0.00	0	0.00							
	Partially sighted	0	0.00	0	0.00	0	0.00	1	1.67							
	Speech impaired	0	0.00	1	2.94	0	0.00	0	0.00							
	Paralysed	1	0.72	1	2.94	1	1.82	0	0.00							
	Mental disorder	1	0.72	1	2.94	0	0.00	1	1.67							
	Deaf	0	0.00	1	2.94	0	0.00	0	0.00							
	CH is active	No <sup>a, c, d</sup>	7	5.07	1	2.94	1	1.82	0			0.00	3.96	0.319		
		Yes <sup>a, c, d</sup>	131	94.93	33	97.06	54	98.18	60			100.00				
		No <sup>a, d</sup>	22	15.94	2	5.88	1	1.82	25			41.67			46.13***	0.614
		Yes <sup>a, c, d</sup>	114	82.61	31	91.18	54	98.18	26			43.33				
Main activity of CH	Salt production <sup>c, d</sup>	46	33.33	9	26.47	14	25.45	39	65.00	145.82***	0.412					
	Fish frying <sup>a</sup>	8	5.80	0	0.00	0	0.00	1	1.67							
	Fish smoking <sup>a, c</sup>	10	7.25	0	0.00	1	1.82	2	3.33							
	Market gardening <sup>a, c</sup>	4	2.90	13	38.24	38	69.09	15	25.00							
	Other <sup>c, d</sup>	70	50.72	12	35.29	2	3.64	3	5.00							
Main activity of WH	Salt production <sup>b, c, d</sup>	30	21.74	14	41.18	25	45.45	2	3.33	114.70***	0.365					
	Fish frying <sup>a, c, d</sup>	22	15.94	2	5.88	1	1.82	1	1.67							
	Fish smoking <sup>d</sup>	11	7.97	0	0.00	7	12.73	0	0.00							
	Market gardening <sup>a, c, d</sup>	6	4.35	3	8.82	15	27.27	1	1.67							
	Other <sup>c, d</sup>	69	50.00	15	44.12	7	12.73	56	93.33							
Quantitative variables		Mean	St.	Mean	St.	Mean	St.	Mean	St.	F-test						
Age of CH		46.07	14.60	45.65	8.31	42.80	14.14	48.72	15.48	1.69						

(continued on next page)

Table 3 (continued)

Quantitative variables	Mean	St.	Mean	St.	Mean	St.	Mean	St.	F-test
No. of men in household <sup>a, b, d</sup>	2.55	1.34	4.88	1.49	2.34	1.28	1.88	1.25	39.79***
No. of women in household <sup>a, b, c, d</sup>	2.35	1.16	4.76	2.00	2.09	1.13	2.13	1.39	36.52***
Size of household <sup>b, d</sup>	4.93	1.77	9.65	2.20	4.71	1.88	4.02	1.93	73.54***
No. of babies <sup>b</sup>	0.06	0.25	0.18	0.39	0.11	0.31	0.05	0.22	1.94
No. of young children <sup>b</sup>	0.69	0.81	1.47	1.35	0.60	0.85	0.53	0.77	9.29***
No. of adolescents <sup>a, b, c, d</sup>	0.62	0.97	1.5	1.38	0.58	0.96	0.37	0.76	10.21***
No. of older men	0.08	0.27	0	0.00	0.05	0.23	0.07	0.25	1.01
No. of household's old women <sup>1, 2, 3</sup>	2.32	0.48	2.29	0.75	2.17	0.41	2.39	0.61	0.73
No. of pregnant women	0.01	0.12	0.03	0.17	0	0.00	0.03	0.18	0.13
No. of breastfeeding women	0.07	0.26	0.06	0.24	0.07	0.26	0.05	0.22	2.61
No. of years of experience of CH <sup>a, c, d</sup>	16.41	10.64	16.23	8.33	13.57	10.97	18.00	11.79	1.56
No. of hours of work per day of CH <sup>a, c, d</sup>	8.45	2.78	6.59	2.59	7.45	2.74	8.09	2.67	3.21*
No. of working days per week of CH <sup>a, c, d</sup>	5.68	1.31	5.77	1.23	5.79	1.15	5.40	1.31	1.03
Total monthly revenue of CH (XOF/month) <sup>a, b, c, d</sup>	48,220.59	42,492.09	93,136.36	61,982.56	60,132.08	41,787.48	55,745.61	48,913.11	5.23**
No. of years of experience of WH <sup>1, 4</sup>	10.88	8.40	10.95	6.96	11.00	6.65	8.00	5.71	0.20
No. of working hours per day of WH <sup>a, c, d</sup>	7.55	3.56	7.95	3.57	8.98	2.63	7.50	3.32	1.87
No. of working days per week of WH <sup>a, c, d</sup>	4.77	1.49	5.26	1.69	5.60	1.25	3.75	0.50	4.50**
Total monthly revenue of WH (XOF/month) <sup>c, d</sup>	29,630.43	27,687.55	49,789.47	46,277.64	44,854.17	31,631.52	18,000	600,000.00	3.70*

CH: Chief of the household; WH: Woman of the household; No.: Number; Freq.: Frequencies; St.: Standard error; \*:  $P < 0.05$ ; \*\*:  $P < 0.01$ ; \*\*\*:  $P < 0.001$ .

<sup>a</sup> Discriminant variables of the type 1 households.

<sup>b</sup> Discriminant variables of the type 2 households.

<sup>c</sup> Discriminant variables of the type 3 households.

<sup>d</sup> Discriminant variables of the type 4 households.

## References

- Adanguidi, J., Padonou, E. A., Zannou, A., Hougbo, S. B. E., Saliou, I. O., & Agbahoungba, S. (2020). Fuelwood consumption and supply strategies in mangrove forests – insights from RAMSAR sites in Benin. *Forest Policy and Economics*, 116, Article 102192. <https://doi.org/10.1016/j.forpol.2020.102192>
- Adebisi, I. I., Okeyinka, Y. R., & Ayinla, A. K. (2018). Appraisal of the impact of the gender of household heads on housing condition in Egbeda-Iragbiji, Osun State, Nigeria. *Journal of African Studies and Development*, 10(2), 19–28. <https://doi.org/10.5897/jasd2016.0429>
- Ahonoukoun, L. V. (2016). In *La Réglementation du Travail Domestique au Bénin et les Apports de la Convention 189 de l'OIT* (p. 191).
- Alanamu, S. (2004). Ethno-religious conflict in Nigeria. *African Profile*, 1(1), 51–53.
- Alexander, R. (1987). *The biology of moral systems*. New York, NY: Aldine De Gruyter.
- Alonso, C., Brussevich, M., Dabla-Norris, E., Kinoshita, Y., & Kochhar, K. (2019). *Reducing and redistributing unpaid work: Stronger policies to support gender equality*. IMF Working Paper.
- An, M. Y. (2018). *Gendered Power Relations in Transition?: Division of paid and unpaid work in Japan and South Korea from a comparative perspective. Overcoming inequalities in a fractured world: Between elite power and social mobilization*. Geneva: The United Nations Research Institute for Social Development (UNRISD).
- Atchade, T. B. (2021). Determinants of woman's decision-making power in the household: Evidence in Benin in Ivory coast and in Niger. *Repères et Perspectives Economiques*, 5(1).
- Becker, G. S. (1965). A theory of the allocation of time. *Economic Journal*, 75(299), 493–517.
- Beechey, V. (1977). Some notes on female wage labour in capitalist production. *Capital & Class*, 3, 45–66. Autumn.
- Bethmann, D., & Rudolf, R. (2015). Happily ever after? Intrahousehold bargaining and the distribution of utility within marriage, 1503.
- BIT. (2003). In *Domestic work, conditions of work and employment: A legal perspective*, 7. Programme des conditions de travail et d'emploi.
- Blau, F., & Kahn, L. (2017). The gender wage gap: Extent, trends, and sources. *Journal of Economic Literature*, 55(3), 789–865.
- Bradley, H. (2016). *Fractured identities: Changing patterns of inequality*. Cambridge: Polity Press.
- Calinski, & Harabasz, J. (1974). A dendrite method for cluster analysis. *Communications. Campaña*, J. (2018). *Gender norms and the gendered distribution of total work in Latin American households*.
- Clark, W., & Dieleman, F. (2017). *Households and Housing: Choice and outcomes in the housing market*. London: Taylor and Francis.
- Coulson, M., Branka, M., & Hilary, W. (1975). The housewife and her labour under capitalism: A critique. *New Left Review*, 89, 59–71.
- Crespi, I., & Lomazzi, V. (2018). Gender mainstreaming and gender equality in Europe: Policies, legislation and Eurobarometer surveys. *Studi di Sociologia*, 56, 23–40.
- Dowie, G., & de Haan, A. (2019). In *Effets des normes sociales et sexospécifiques sur les perspectives économiques des femmes dans différents contextes. Normes sociales et autonomisation économique des femmes* (p. 4).
- D'Souza, A. (2010). Moving towards Decent work for Domestic workers: An Overview of the ILO's work. *International Labour Office, CH1211 Geneva*, 22, 108p.
- Duncan, S., & Rosalind, E. (1997). Lone mothers and paid work – rational economic man or gendered moral rationalities? *Feminist Economics*, 3(2), 25–46.
- Elmer, M. C. (1935). REID, MARGARET. Economics of household production, 408 *Otolaryngology-Head and Neck Surgery*, 178(1), 195–210. <https://doi.org/10.1177/0194599819859883>. New York: John Wiley and Sons, Inc., 1934.
- Engels, F. (1884). *The origin of the family, private property and the state*. Moscow: Progress Publishers.
- Eurofound. (2016). The gender employment gap: Challenges and solutions. In Folbre, N., & Nelson, J. (2000). For love or money—or both? *The Journal of Economic Perspectives*, 14, 123–140.
- Gammage, S., Sultana, N., & Mouron, M. (2019). *Les coûts indirects du travail domestique non rémunéré. Les secteurs public et privé doivent œuvrer de concert à la promotion de l'égalité femmes-hommes* (pp. 20–23).
- Gardiner, J. (1975). Women's domestic labour. *New Left Review*, 89, 47–57.
- Grunow, D., Begall, K., & Buchler, S. (2018). Gender ideologies in europe: A multidimensional framework. *Journal of Marriage and Family*, 80, 42–60.
- Hall, P. A., & Soskice, D. (2001). *Varieties of capitalism: The institutional foundations of comparative advantage*. Oxford: Oxford University Press.
- Henrich, J., Boyd, R., & Richerson, P. J. (2012). The puzzle of monogamous marriage, 2012 *Phil. Trans. R. Soc. B*, 367, 657–669. <https://doi.org/10.1098/rstb.2011.0290>. or via <http://rstb.royalsocietypublishing.org>.
- Hyman, P. (1994). Feminist critiques of orthodox economics: A survey. *New Zealand Economic Papers*, 28(1), 53–80.
- ILO. (2007). *The employment relationship : An annotated guide to ILO recommendation No. 198* (Retrieved from).
- Inglehart, R., & Norris, P. (2010). *Rising tide: Gender equality and cultural change around the world*. Cambridge: Cambridge University Press.
- INSAE. (2016). *Effectifs de la population des villages et quartiers de ville du Bénin (RGPH-4, 2013)*. République du Bénin.
- Jefferson, T., & King, J. E. (2001). Never intended to be a theory of everything": Domestic labor in neoclassical and marxian economics. *Feminist Economics*, 7(3), 71–101.
- Jiboye, A. (2004). *An Assessment of the Influence of socio-cultural Factors on Housing quality in osogbo, Nigeria (Master's thesis)*. Obafemi Awolowo University.
- Jiboye, D. (2010). Evaluating users' household-size and housing quality in osogbo, Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 3(2). <https://doi.org/10.4314/ejesm.v3i2.59825>
- Jiboye, A. D., & Ogunshakin, L. (2010). The place of the family house in contemporary oyo town, Nigeria. *Journal of Sustainable Development*, 3(2). <https://doi.org/10.5539/jsd.v3n2p117>
- M.U. Kayode, S. J., Muhammad, M. S., & Bello, M. U. (2021). Effect of socio-economic characteristics of households on housing condition in bauchi metropolis, bauchi state, Nigeria *Traektoría Nauki Path of Science*, 7. <https://doi.org/10.22178/pos.72-6>. No 7 ISSN 2413-9009
- King, A. D. (1976). *Colonial Urban Development: Culture, Social Power and Environment*. London: Routledge and Kegan Paul.
- Kochhar, K., Jain-Chandra, S., & Newiak, M. (2016). *Women, Work, and Economic Growth: Leveling the Playing Field*. Washington, DC: International Monetary Fund. <https://www.elibrary.imf.org>.
- Lippel, K., & Bienvu, C. (1995). Les dommages fantômes : l'indemnisation des victimes de lésions professionnelles pour l'incapacité d'effectuer le travail domestique. *Les Cahiers de droit*, 36(1), 161–208. <https://doi.org/10.7202/043327ar>
- Lomazzi, V., Israel, S., & Crespi, I. (2018). Gender equality in europe and the effect of work-family balance policies on gender-role attitudes. *Social Sciences*, 8(1). <https://doi.org/10.3390/socsci8010005>

- Malta, V., Kolovich, L., Leyva, A. M., & Tavares, M. M. (2021). *The Close Relationship between Informality and Gender Gaps in Sub-Saharan Africa*. International Monetary Fund.
- Melesse, M., & O'Neill, M. (2018). *Who cares? Exploring solutions to women's double burden*. International Development Research Center.
- Munisamy, A., Sahid, S., & Hussin, M. (2022a). Socioeconomic sustainability for low-income households: The mediating role of financial well-being. *Sustainability*, 14, 9752. <https://doi.org/10.3390/su14159752>
- Munisamy, M., Sahid, S., & Hussin, M. (2022b). Exploratory factor and reliability analysis of financial literacy instrument to assess low-income groups in Malaysia. *Journal of Social Economics Research*, 9, 39–51.
- Naranjo, J. C. C. (2018). *Self-Employment, employment, and time-allocation decisions: social norms, the work-life-family balance, and collective labor supply*. Universidad de Zaragoza.
- Ogundahunsi, D. S., & Adejuwon, S. A. (2014). *Housing Condition and health relationship in Ijeda-Ijesa and Iloko-Ijesa, Osun State, Nigeria*. Retrieved from [https://globaljournals.org/GJHSS\\_Volume14/1-Housing-Condition-and-Health.pdf](https://globaljournals.org/GJHSS_Volume14/1-Housing-Condition-and-Health.pdf).
- OIT. (2019). *Œuvrer pour la paix et la justice sociale* (p. 60p). Organisation Internationale du Travail.
- Olayiwola, L., Adeleye, O., & Jiboye, A. (2009). *Effects of socio-cultural factors on Housing Quality in Osogbo*. Nigeria Retrieved from <https://www.irbnet.de/daten/iconda/CIB1936.pdf>.
- Pilon, M. (1996). Women heads of household in Africa: State of knowledge. In *Women heads of household*.
- PNUD. (2016). *Rapport sur le développement humain en Afrique. Accélérer les progrès en faveur de l'égalité des genres et de l'autonomisation des femmes en Afrique* (p. 241).
- Reid, M. G. (1977). How new is the new home economics? *Journal of Consumer Research*, 4(3), 181–183.
- Rogers, B. (1983). *The internal dynamics of households*, 2.
- Samman, E., Presler-Marshall, N. J., Tanvi, B., Claire, M., Maria, S., & John, W. (2016). *Women's work: mothers, children and the global childcare crisis* (p. 91). Report March 2016, 2052-7209.
- Scheidel, W. (2009). A peculiar institution? Greco-roman monogamy in global context. *History Family*, 14, 280–291. <https://doi.org/10.1016/j.hisfam.2009.06.001>
- Schildberg, C. (2014). In *Une économie des soins durable. Note conceptuelle d'une perspective féministe* (p. 16).
- UNRISD. (2010). Combating poverty and inequality. *Structural Change, Social Policy and Politics*, 380.
- Ventura-Dias, V. (2011). Notes on the care and the dynamics of households. In *IAFFE conference in hanzhou* (China, June).
- Whittle, J. (2019). A critique of approaches to 'domestic work': Women, work and the pre-industrial economy. *Past & Present*, 243(1), 35–70.
- WIEGO. (2018). In *Rousse d'outils Travailluse Domestiques Wiego Fitd. Votre Trousse d'outils sur la C189 de l'OIT. La convention sur les travailleuses et travailleurs domestiques, votre trousse d'outils sur la C189 de l'OIT la Convention sur les Travailleuses et Travailleurs Domestiques (Région Afrique), Femmes dans l'Emploi Informel : Globalisation et Organisation (WIEGO)* (p. 48).
- Wolpe, H. (1972). Capitalism and cheap labour power: From segregation to apartheid. *Economy and Society*, 1(4), 425–456.
- Xiao-Yuan, D., & Xinli, A. (2015). Gender patterns and value of unpaid care work: Findings from China's first large-scale time use survey. *Income and Wealth*, 61(3), 540–560. <https://doi.org/10.1111/roiw.12119>