

Factors Influencing the Participation in Defined Contribution Pension Scheme by Urban Women in the Informal Sector in Ghana

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Abstract

The study set out to investigate reasons for the low interest in participating in Defined Contribution Pension Schemes (DCPS) by urban women in the informal sector in Ghana (UWISG) in order to unravel the causes of the phenomenon of non-participation so that solutions can be identified. Most studies conducted on voluntary participation in pension schemes have not explored the such variables; perceived net pension wealth, permanent income, attitude, subjective norm, and perceived behavioural control. The main research questions among others are; what are the effects of demographic characteristics of urban women in the informal sector in Ghana (UWISG) on their intention to participate in Defined Contribution Pension Schemes (DCPS)? What is the impact of perceived net pension wealth (perceived benefits) on the intention of UWISG to participate in DCPS? The Methodology of the study is quantitative research design. The study has two research models a logistic regression model of demographic variables and model is a framework consisting of exogenous and endogenous latent variables.

Some significant findings of the study are (i) an inverse relationship between disposition to save and intention to participate in DCPS. The inverse relationship implied that most of the respondents would prefer to probably put money in their savings or investment accounts rather than contributing to DCPS. The study also found the age variable to be an insignificant influencer of DCPS adoption intention.

Keywords: Ghana, Pension, Defined contribution, Urban Women, Informal sector, Planned Behaviour, Life Cycle, Research Models, Demographic Characteristics

Overview

Ghana, like most countries in Sub-Saharan Africa (SSA) has only a small fraction of the labour force participating in contributory pension schemes (Dorfman, 2015). Dorfman (2015) reported that in Sub-Saharan African countries, the average percentage of the labor force participating in contributory pension schemes is about 7.3 percent (Dorfman, 2015). Dorfman (2015) further stated that one of the reasons for the low rates of participation in contributory pension schemes is the possible misalignment of wage-based contributory schemes with the characteristics and needs of economies that are dominated by informal sector workers and farmers. The informal sector dominates the labour force in Ghana. Out

of a total labour force of 9,782,655 workers, the informal sector consists of 8,364,649 workers, that is, 86%. Ghana Statistical Services (GSS, 2015). The total number of workers in the informal sector who participate in voluntary pension schemes is 138,500, out of which 60,875 are women Social Security and National Insurance Trust (SSNIT-Ghana, 2018). This statistic means that only 1.6% of Ghanaian workers in the informal sector participate in voluntary pension schemes. It is evident therefore, that the majority of the working force (especially in the informal sector) in Sub-Saharan Africa do not participate in contributory pension schemes Dorfman (2015).

The Social Security and National Insurance Trust (SSNIT) of Ghana was established in 1972 to administer the National Social Security Scheme (SSNIT-Ghana, 2018). Social security is any government program that provides financial assistance to people with inadequate or no income (Bach, 2003). Before 1972, the social security scheme was administered by the Department of Pensions and the State Insurance Corporation (SSNIT-Ghana, 2018). Between 1972 and 1991, SSNIT administered the scheme as a provident fund. A provident fund provides lump sum payments to employees upon exit from their place of employment, but not monthly pension payments (Bach, 2003). A provident fund therefore differs from a pension fund in terms of the provision of monthly pension payments. In 1991, the scheme was converted to a Social Insurance Pension Scheme (SSNIT-Ghana, 2018).

The National Pension Act (Act 766) was passed by the Ghanaian parliament in 2008 (SSNIT-Ghana, 2018). The act makes provision for a 3-tier national pension scheme; under the Act, SSNIT is to manage the basic National Social Security Scheme referred to as the first tier of a contributory 3-tier scheme. Tier 1 is therefore a mandatory basic contributory Social Security Scheme managed by SSNIT. The other tiers of the national pensions scheme are Tier 2 and Tier 3. Tier 2 is a mandatory fully-funded and privately managed occupational scheme, while tier 3 is a voluntary fully-funded and privately managed provident fund and personal pension plan. Act 766 makes it mandatory for workers in the formal sector to be part of the Tier 1 and Tier 2 pension scheme. However, participation in the pension schemes is optional for workers in the informal sector (SSNIT-Ghana, 2018). Unlike the formal sector, the informal sector is the part of the economy that is not monitored or taxed by the government, and whose activities do not form part of the gross domestic product (GDP) (Becker, 2004).

Pensions play a vital role in poverty alleviation of the elderly; one of the most vulnerable groups in any society, particularly older women (Stewart & Yermo, 2009). In the absence of retirement pension, there must be some form of social support for people who cannot work due to old age. However, these social support structures are non-existent in developing world (Stewart & Yermo, 2009). Smaller family sizes and social pressures from urbanization have made it difficult for elderly Africans to rely on family support (Stewart & Yermo, 2009). Pensions have been found to support not only the beneficiaries, but the family as a whole. For instance, pensions reduce the poverty gap ratio by 13% in South Africa and increase the income of the poorest 5% of the population by 50% (HAI, 2006). HAI (2006) also reported that in Tanzania, where there is no pension, out of 146,000 children orphaned by HIV/AIDS, only 1,000 attended secondary school, because their grandparents could not afford the fees.

By the year 2015, only 10.4% of the labour force in Ghana were participating in a contributory pension scheme (Dorfman, 2015). This statistic implies that by 2015, about 90% of the labour force in Ghana did not belong to any pension scheme. This study seeks to investigate the reasons why a very large portion of the working force do not belong to any pension scheme, especially women, who tend to be more disadvantaged (Stewart & Yermo, 2009).

Problem Statement

The 21st century has seen a significant change in the trend of employment. The larger part of the general population is self-employed. As a result, the private sector employs about 85% of the nation's population (Dasgupta, 2001). This trend implies that a huge number of individuals in the informal sector are not covered as far as pensions and social security schemes are concerned. This situation also means that a large portion of the population is in need of some sort of social security during retirement.

Haug (2014) stated that the informal sector employs about 86.1 per cent of the working population in Ghana. The percentage of working women in the informal sector is about 90.9 per cent while the percentage of working men in the informal sector is about 81% (Haug, 2014). Women are over-represented in the informal sector with low wages, irregular, and casual work (Holmes & Scott, 2016). These statistics, therefore, imply that more women than men are likely to have no pension at old age (when they retire from active employment). The statistics also imply that more women than men are likely to experience poverty at old age. The implications of poverty at old age cannot be over-emphasised; hunger, lack of access to health care, homelessness, and mental health challenges (Stewart & Yemo, 2009).

The current national pension scheme of Ghana (SSNIT pension scheme) allows voluntary enrolment of workers in the informal sector. This provision means that workers outside the formal sector can join the SSNIT pension scheme and make regular contributions. Statistics show that despite the provision of voluntary enrolment, the majority of workers in the informal sector have not enrolled on the SSNIT pension scheme (SSNIT, 2018). This phenomenon is of concern because of the prevalence of poverty at old age, especially among urban women in the informal sector in Ghana. The current study, therefore, sought to identify the factors that influence the participation in defined contribution pension schemes by urban women in the informal sector in Ghana.

Research Design

In choosing a specific research design, the researcher must consider several factors. These factors include the aim of the study, the study site, the type of enquiry, the degree to which the research is controlled by the researcher, the time scope under which the phenomenon is studied and the level at which the data is analyzed. In addition, the researcher must grapple with the task of sampling, the measurement of the variables, and data analysis (Sekaran & Bougie 2016).

The study used the quantitative research design, which involves the testing of a set of hypotheses using an appropriate method of analysis. The quantitative design involves the selection of a sample from the population, the administering of questionnaires (data collection), statist(ical data analysis, and the presentation of results.

The various issues to be considered in the research design are discussed in the next sections.

Nature of study

There are various types of studies that a researcher may conduct. The study may be exploratory, descriptive, hypothesis testing or a case study, depending on the research problem (Sekaran & Bougie, 2016). Researcher may conduct an exploratory study if they want to investigate a phenomenon and understand the nature of that phenomenon (Saunders et al. 2012). In most cases, a researcher will conduct an exploratory study if there is very little information about the phenomenon and there is a need for clarity or more understanding (Saunders et al., 2012; Sekaran & Bougie, 2010). Exploratory research

thus sets the stage for theory development and hypothesis testing. In the current study, the researcher puts together existing theories to understand urban women participation in defined contribution pension schemes in Ghana. The current study is therefore not exploratory because of the use of existing theories, but involves the testing of hypotheses. It is not descriptive and not a case study.

In a descriptive study, the researcher seeks to generate a report on the nature of a set of variables of concern. The researcher thus identifies relevant properties or features of the variable and writes a report on the findings. The current study is not descriptive because the researcher is not interested in describing the properties of the variables of concern, but rather wants to identify and understand the relationships between the variables. Hypotheses testing studies are also conducted to explain the variance in the dependent variable that is explained by the independent variable.

Hypothesis testing was the most suitable option because the researcher wanted to identify the exogenous variables in the research model that had a significant influence on the endogenous variable. Hypothesis testing has been used in similar work, for instance Zhou (2015), Alraimi et al. (2015), Al-qeisi et al. (2014), and Ain et al. (2015). A total of 14 hypotheses were stated in the research framework to be tested.

Type of investigation

There are two types of investigation; causal and correlational (Sekaran and Bougie (2010). In causal studies, the researcher seeks to identify a conclusive cause-and-effect relationship between a set of variables. In a causal investigation, the researcher looks out for one or more variables that undeniably cause the problem. Thus, the researcher in a causal study is able to prove that for instance, Y causes Z and so taking out Y would solve the problem in Z.

Alternatively, if the researcher wants to determine relevant factors that are related to the problem, then a correlational study is more suitable (Sekaran & Bougie, 2010). In the current study, a correlational study is adopted because it involves factor analysis, which aims to provide approximations of the extent and significance of hypothesized causal relations between sets of variables (Sekaran & Bougie, 2010).

Researcher interference

The researcher adopted the positivist approach which supports a detachment of the researcher from the objects of research. In the current study, the researcher used research assistants to collect survey data and therefore did not have direct contact with the survey participants.

Units of analysis

The unit of analysis is the extent or the level the data collected by the researcher is aggregated for data analysis (Sekaran & Bougie, 2010). The data may be analyzed at the individual level, group level, firm level or at the national level. For the current study, the data is analyzed at the individual level because the scope of the research is at the individual level. The research questions determine the level of aggregation (Sekaran & Bougie, 2010).

Time horizon: cross-sectional versus longitudinal studies

Research projects may be cross-sectional or longitudinal. Cross-sectional studies involve data collection at a particular point in time, while longitudinal studies involve data collection at different points in time (Sekaran & Bougie, 2010). Cross-sectional studies are convenient in instances where the researcher is

constrained by time and funding. Longitudinal studies are recommended when the variable(s) being studied may change over time, but such studies may be expensive and time-consuming. (Sekaran & Bougie, 2010). In the current study, the researcher adopts a cross-sectional study because of time and funding constraints.

Scale used

Researchers may choose between a rating scale or a ranking scale depending on their preference. A rating scale is an array of categories constructed to get information about a quantitative or a qualitative property. However, a ranking scale provides a list of items and the respondent has to arrange the items in a particular order for instance importance, preference, et cetera (Sekaran & Bougie, 2010). In the current study, the researcher chose the Likert rating scale. The Likert scale is very popular and very practical for collecting survey data (Viswanathan et al. 2004). This research employs a five-point Likert scale; Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree.

Research Hypotheses

This section attempts to justify the inclusion of the variables in the research model as well as the stated relationships between the variables. Although the researcher cannot relate to the relationships between the demographic variables and the endogenous variable (Intention to participate in DCPS) to any established theory of financial services adoption or consumer behaviour, the researcher identified previous studies that confirmed those relationships. Alemanni & Lucarelli (2017), Ampaw et al. (2018), Foster et al. (2013), Li (2007) and Collins-Sowah et al. (2013) conducted studies on pension scheme adoption and found that age, marital status, income level, educational background, family size, and health condition had a significant relationship with intention to participate in DCPS.

Based on these studies, the researcher states the following null and alternate hypotheses;

H1₀: Age of UWISG [AGE] has no significant influence on their intention to participate in DCPS [INTP].

H2₀: Marital status of UWISG [MRST] has no significant influence on their intention to participate in DCPS.

H3₀: Income level of UWISG [INC] has no significant influence on their intention to participate in DCPS.

H4₀: Educational background of UWISG [EDU] has no significant influence on their intention to participate in DCPS.

H5₀: Family size of UWISG [FAM] has no significant influence on their intention to participate in DCPS.

H6₀: Health status of UWISG [HS] has no significant influence on their intention to participate in DCPS.

Alternate hypotheses:

H1: Age of UWISG [AGE] has a significant influence on their intention to participate in DCPS [INTP].

H2: Marital status of UWISG [MRST] has a significant influence on their intention to participate in DCPS.

H3: Income level of UWISG [INC] has a significant influence on their intention to participate in DCPS.

H4: Educational background of UWISG [EDU] has a significant influence on their intention to participate in DCPS.

H5: Family size of UWISG [FAM] has a significant influence on their intention to participate in DCPS.

H6: Health status of UWISG [HS] has a significant influence on their intention to participate in DCPS. Following the life cycle theory on pensions (see Section 2.5), it can be inferred that when the net pension wealth (present value of benefit minus value of contributions) is positive, an individual reduces all other forms of savings and this causes consumption to increase in both periods. If the net pension wealth is negative, an individual will prefer to increase their other forms of savings and reduce consumption at each period. Perceived net pension wealth therefore has an effect on willingness to participate in pension schemes. This relationship is confirmed in the study of Zhao and Brosig (2016). Zhao and Brosig (2016) studied pension schemes in rural China.

Based on the life cycle theory on pensions, the researcher states the following hypotheses:

Null hypothesis: H7₀: Perceived net pension wealth (perceived benefits) has no significant influence on UWISG intention to participate in DCPS.

Alternate hypothesis: H7: Perceived net pension wealth (perceived benefits) has a significant influence on UWISG intention to participate in DCPS.

The researcher refers to the permanent income hypothesis (Section 2.6) and argues that individuals that have the disposition to save for a “rainy day” are more likely to participate in DCPS. Studies conducted by Hall, Mishkin, & Mar (1982) and Bernanke (1984) confirm this relationship.

Based on the permanent income hypothesis and studies conducted by Hall, Mishkin, & Mar (1982) and Bernanke (1984), the researcher states the following hypotheses:

Null hypothesis: H8₀: Attitude of UWISG towards permanent income has no significant influence on their intention to participate in DCPS.

Alternate hypothesis: H8: Attitude of UWISG towards permanent income has a significant influence on their intention to participate in DCPS.

The researcher proposes a logical hypothesis that an individual’s disposition to save is likely to have an influence on his/her intention to participate in DCPS because DCPS is a form of saving for old age. The researcher thus refers to studies conducted by Alemanni & Lucarelli, (2017) which shows that disposition to save has a significant influence on intention to participate in DCPS. The researcher therefore proposes the following hypotheses:

Null Hypothesis: H9₀: Disposition of UWISG to save has no significant influence on their intention to participate in DCPS.

Alternate hypothesis: H9: Disposition of UWISG to save has a significant influence on their intention to participate in DCPS.

The researcher proposes a logical hypothesis that an individual’s disposition to borrow has an influence on his/her intention to participate in DCPS because individuals who are disposed to borrowing have a lesser tendency to save. They are more likely to use funds meant for saving to offset their indebtedness. Alemanni and Lucarelli (2017) report that disposition to borrow has a significant influence on intention to participate in DCPS. The researcher therefore proposes the following hypotheses:

Null Hypothesis: H10₀: Disposition of UWISG to borrow has no significant influence on their intention to participate in DCPS.

Alternate hypothesis: H10: Disposition of UWISG to borrow has a significant influence on their intention to participate in DCPS.

The author refers to the theory of planned behaviour (section 2.4) which states that attitude, subjective norm and perceived behavioural control influence behaviour. Attitude, subjective norm and perceived

behavioural control influence pension adoption behaviour (East, 1993; George, 2005; Rahim, 2011; Taylor & Todd, 1995). The researcher therefore proposes the following hypotheses:

H11₀: Attitude of UWISG towards DCPS has no significant influence on their intention to participate in DCPS

H12₀: Subjective norm has no significant influence on UWISG intention to participate in DCPS

H13₀: Perceived behavioural control has no significant influence on UWISG intention to participate in DCPS

The Alternate Hypotheses are stated below;

H11: Attitude of UWISG towards DCPS has a significant influence on their intention to participate in DCPS

H12: Subjective norm has a significant influence on UWISG intention to participate in DCPS

H13: Perceived behavioural control has a significant influence on UWISG intention to participate in DCPS

The proposed research models are shown below.

The logistic regression model is in the form;

$$\text{logit } P(\text{INTP}) = \alpha + \beta_1[\text{AGE}] + \beta_2[\text{MRST}] + \beta_3[\text{INC}] + \beta_4[\text{EDU}] + \beta_5[\text{FAM}] + \beta_6[\text{HS}]$$

Where α is a constant and β_1, \dots, β_6 are parameters of the explanatory variables. The explanatory variables are defined in Section 1.4.

Model Two: A framework consisting of exogenous and endogenous latent variables.

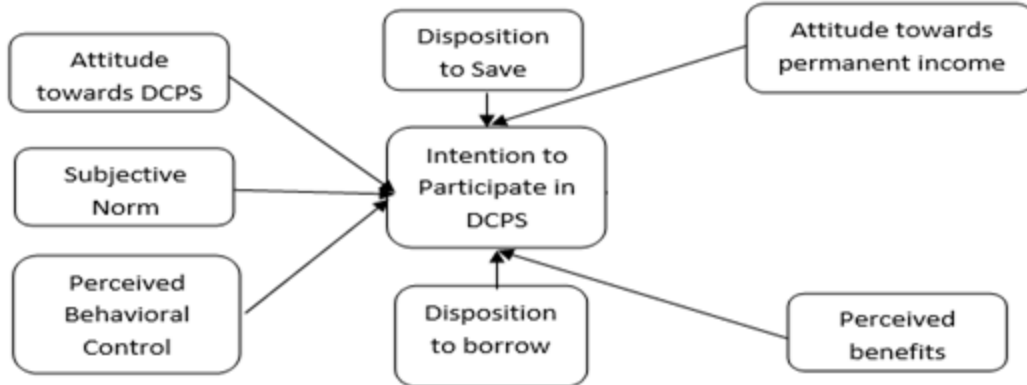


Figure 3. 1 The proposed research model

Population and Sampling Strategy

A sample is a subset of a population. The subset is chosen based on a particular rule or a widely accepted standard. In most cases, the sample must, to a large extent be representative of the total population (Kothari 2004).

The researcher must follow laid-down procedures in choosing the sample. It is usually not feasible to study the entire population, so a miniature of the population is rather studied. The sample is chosen after the researcher agrees on the research paradigm, methodology, and design. (Saunders et al., 2012; Kothari 2004). The sampling procedure used is a very important aspect of the research project; if it is not well conducted, there is a very high likelihood of bias which may lead to unreliable results.

Based on the recommendations of Sekaran and Bougie (2010), the researcher first defined the population, chose the appropriate sample selection method, and then determined the sample size.

The population

The population/the universe may be finite or infinite. In a finite population, the total number of elements in that universe is known, while in an infinite population, the total number of elements is not known (Kothari 2004). In defining the target population, the researcher needs to specifically state what elements should be included in that population or not. The choice of the target population may be based on factors such as geographical boundaries, age, gender, and time.

In the current study, the population was defined based on the following criteria:

- The population consisted of female members of the Association of Market Women, Dressmakers, Hairdressers, Head Porters, and other informal sector worker groups in Accra. The total number of members is 930.
- Geographical Location: The study was conducted in Accra, the capital city of Ghana.
- Accra is chosen because it has the highest number of informal sector workers in varied types of occupation.
- Age: The population consisted of adults between the age of 18 and 60
- Gender: The population consisted of females

Sampling frame

A sampling frame is the complete list of all the elements in the target population (finite universe only). The researcher may prepare the sampling frame if it is not readily available. The sampling frame should be comprehensive, precise, reliable and appropriate (Kothari 2004). In the current study the sampling frame is the complete list of all the female members of the Association of Market Women, Dressmakers, Hairdressers, Head Porters, and other informal sector worker groups in Accra. The list consisted of 5100 members.

Sample size determination

Several factors influence the determination of the sample size. These factors include; the purpose of the study, the degree of precision required or the margin of error the researcher can permit, funding and time constraints, and the type of analysis to be undertaken (Saunders et al., 2012; Sekaran & Bougie, 2010). Increasing the sample size may also increase precision and reduce sampling error.

The sample size could be determined in several ways. First, it could be determined arbitrarily by the researcher because of time and budget constraints (Kothari 2004). The researcher may also calculate the sample size using statistical guidelines if the parameters of the population are known (Kothari 2004). The researcher can also be guided by previous studies.

In the current study the researcher determined the sample size using statistical guidelines because the parameters of the population are known and a sampling frame was available.

Yamane, (1967) proposed a formula for the calculation of the minimum sample size for a given population. The formula is given as:

$$n = \frac{N}{1 + N(e^2)}$$

where n = sample size, N = population size, and e = margin of error

Using a confidence level of 95% (e = 0.05) and a population size of 930, n = 280.

The minimum sample size is therefore 280. The researcher envisages a response rate of 70%, hence, correcting for response rate, the researcher will sample 400. Seventy percent of 400 is 280.

Sample selection method

There are two major sample selection methods; probability sampling and non-probability sampling (Kothari 2004; Sekaran & Bougie, 2010). In probability sampling, the probability of each member of the population being selected is known, whereas in non-probability sampling, that probability is not known. In probability sampling, the sample should be accurately representative of the population (Kothari 2004; Sekaran & Bougie, 2010); this allows the researcher to simply make generalizations about the population based on the sample. There are different types of probability sampling techniques; simple random sampling, systematic sampling, stratified sampling, cluster sampling, and multistage sampling (Sekaran & Bougie 2010).

In the current study, because the sampling frame was available, the researcher chose probability sampling. The researcher chose simple random sampling because there was only one gender to sample (that is females) so the male-female distribution in the sample was not an issue. Also, in terms of age, the researcher realized that the ages of the members were evenly spread. The researcher also realized that there was a moderately even distribution of various job/business types in the population; that is, specific job/business types did not dominate the population. It is important for the researcher to perform these checks to prevent bias in the sample.

First, the researcher obtained the sampling frame from the Association of Market Women, Dressmakers, Hairdressers, Head Porters, and other informal sector worker groups in Accra. The researcher then analyzed the sampling frame to identify strata or clusters and their distribution within the population. When the researcher was convinced that a simple random sampling technique will be appropriate for the population, the researcher went on to draw a sample of 400 elements using the RAND() function in Microsoft Excel. The researcher then recruited six research assistants and trained them to administer the questionnaires.

Research Instrument

There were nine latent constructs in the research model. Each construct in the research model had multiple items. The researcher followed the recommendations of Straub et al. (2004) and ensured that the measurement items were taken from literature to ensure content validity. The researcher rephrased the items to fit the context of the current study. The survey instrument was pre-tested to ensure it was comprehensible. Pre-testing is an initial assessment of a survey instrument by a chosen group of respondents in order to find out lapses in the questionnaire; contents, wording, or layout (Sekaran, 2003).

A focus group was constituted to pre-test the questionnaire. The group comprised of lecturers (PhD and non-PhD), and some experienced researchers. The group members identified a few errors in the wording of the questionnaire and made some suggestions for correction. The researcher made the required corrections.

In order to reduce bias, the following questionnaire design principles suggested by Sekaran and Bougie (2010) were followed;

1. Correct wording of the questions
2. Proper categorization of variables, scaling and coding
3. Good appearance of the question

In order for the researcher to adhere to the first design principle, the questions were designed in such a way that they would fit the purpose of the study. The questions were also worded in such a way that the

respondents would easily understand them. The researcher paid particular attention to the extent of comprehensibility of the questions and ensured that respondents would find it easy to read them. To prevent over-burdening of the respondents, the questions did not comprise of more than twenty words. Over-burdening may lead to the skipping of some questions by the respondents (Sekaran & Bougie 2010).

Consistent with the second design principle, questions pertaining to a specific latent variable were positioned in adjoining blocks and coded to show the latent variable being measured. Concise instructions were provided on the questionnaire so that respondents will find it easy answering the questions. Also, the questions and responses were well aligned in a grid to reduce the space taken by each question.

The final questionnaire had three pages starting with a cover letter which had information on the study as well as the contact details of the researcher. The questionnaire had 9 blocks; each block consisted of items used to measure a specific latent construct. Responses to questions were based on a 5-point Likert scale; 1 means Strongly Disagree, 2 means Disagree, 3 means Neutral, 4 means Agree, 5 means Strongly Agree.

The manifest variables in the measurement instrument are defined as follows:

[AGE]: This is the age (in years) of the UWISG

[MRST]: This is the marital status of the UWISG. The marital status could be single, married, divorced, or widowed.

[INC]: This is the monthly income of the UWISG. It is the sum total of all the earnings in Ghana cedis of the UWISG in a month

[EDU]: This variable describes the educational background/level of the UWISG. It describes the highest educational qualification of the UWISG; for instance, secondary school, first degree, and diploma among others

[FAM]: This variable represents the family size of the UWISG. Family size consists of the number of members in the nuclear family, and may include some dependents.

[HS]: This variable describes the condition of health of the UWISG. The status could be healthy, having a chronic disease, or terminally ill.

The latent variables are defined and measured as follows:

Attitude towards DCPS: This describes one's viewpoint about DCPS; that is, whether it is relevant or not. Statements ATT1 – ATT4 measured this variable using a Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

ATT1: Overall, I think that participating in a defined contribution pension scheme is pleasant

ATT2: Overall, I think that participating in a defined contribution pension scheme is beneficial

ATT3: Overall, I think that participating in a defined contribution pension scheme is right

ATT4: Overall, I think that I will enjoy participating in a defined contribution pension scheme

Perceived Benefits: This is the perceived value of the pension pay-out as compared to the contributions. Statements PB1 – PB4 measured this variable using a Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

PB1: I believe a DCPS will give me permanent income after retirement

PB2: I believe the benefits of a DCPS are more than the costs

PB3: I believe a DCPS will cater for my basic needs after retirement

PB4: I believe a DCPS will cater for my family's basic needs after my retirement

Attitude towards permanent income: This describes one's viewpoint about permanent income; that is, whether it is relevant or not. Statements API1 – API4 measured this variable using a Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

API1: Overall, I think that having consistent income throughout my life is pleasant

API2: Overall, I think that having consistent income throughout my life is beneficial

API3: Overall, I think that having consistent income throughout my life is right

API4: Overall, I think that I will enjoy having consistent income throughout my life

Disposition to save: This variable describes whether a person has a savings culture or not.

Statements DS1 – DS6 measured this variable using a Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

DS1: I do not regularly save part of my earnings

DS2: I will never save part of my earnings

DS3: I think saving is not right

DS4: I do not enjoy saving

DS5: I think saving is not a pleasant experience

DS6: I think saving is not beneficial

Disposition to borrow: This variable describes whether a person has a borrowing culture or not.

Statements DB1 – DB6 measured this variable using a Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

DB1: I am not servicing any loan currently

DB2: I will never take a loan

DB3: I think borrowing is not right

DB4: I do not enjoy borrowing

DB5: I think borrowing is not a pleasant experience

DB6: I think borrowing is not beneficial

Subjective Norm: Subjective Norm describes the influence from one's social circle; that is, family, friends, peers, and colleagues at work or school (Ajzen 1985). Statements SN1 – SN3 measured this variable using a Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

SN1: People who influence my behaviour think that I should participate in a defined contribution pension scheme

SN2: People who are important to me think that I should participate in a defined contribution pension scheme

SN3: In general, my social circle think that I should participate in a defined contribution pension scheme

Perceived behavioural control: This is the perception of the ease or difficulty in the performance of that behaviour (Ajzen 1985). Statements PBC1 – PBC4 measured this variable using a Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

PBC1: If I choose to participate in a defined contribution pension scheme, I can do it

PBC2: I can continue participating in a defined contribution pension scheme even if my colleagues are not participating

PBC3: I have often tried to participate in a defined contribution pension scheme but I cannot

PBC4: Whether or not I can participate in a defined contribution pension scheme depends on the circumstances, not on me

Intention to participate in DCPS: This construct describes a person’s decision to either participate in DCPS or not. Statements INT1 – INT3 measured this variable using a Likert scale ranging from (1) “strongly disagree” to (5) “strongly agree”.

INT1: I intend to frequently contribute to a DCPS

INT2: I predict I will frequently contribute to a DCPS

INT3: I plan to frequently contribute to a DCPS

3.6 Instrument Validation
 In order to test the reliability and validity of the measurement instrument, the researcher conducted a pilot study prior to the main study. A pilot study is an initial smaller study conducted by the researcher in order to ascertain the feasibility, time, and cost of the research project. It also enables the researcher to identify unfavourable events, and improve upon the study design before the main data collection exercise (Hulley, Cummings, Browner, Grady, & Newman, 2013). The pilot study also provides an opportunity for the researcher to fine-tune the research questions and eliminate potential problems that may arise during the main data collection phase (Saunders, Lewis, & Thornhill, 2012). There may be several reasons why one may conduct a pilot study, these reasons could be: (1) testing for the correct wording of the questionnaire, (2) checking for correct sequencing of questions, (3) testing the layout of the questionnaire, (4) building rapport with the respondents, (5) estimating the time it takes to complete questionnaire, and (6) testing analysis procedures (Hassan, Schattner, & Mazza, 2006).

The sample size of the pilot study may range from 25 to 100 participants (Blumberg, Cooper, & Schindler, 2014). The researcher chose a sample size of 50 for the current study. The researcher engaged a research assistant who assisted in administering the questionnaires. The researcher trained the research assistant before the questionnaires were administered. The researcher recorded the feedback from the respondents. The researcher monitored the entire process to ensure the right things were being done. A total of 50 questionnaires were completed and returned for analysis.

Data analysis showed that factor loadings for all items were above 0.6. Burns and Burns (2008) proposed that for a variable to unambiguously represent a factor the loading should be 0.60 or above. Variables must have Cronbach’s alpha values of 0.7 and above to meet the reliability criterion (Hair, Sarstedt, Pieper, & Ringle, 2012). Results of the data analysis showed that all the constructs were reliable because Cronbach’s alpha values for the constructs were above 0.7. The instrument was, thus, appropriate for the main study. Results from the preliminary study are presented in Table 3.1.

Table 3. 1 Reliability and Validity Tests

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Intention to participate	0.93	0.93	0.93	0.82
Attitude towards DCPS	0.81	0.93	0.77	0.51
Subjective norm	0.73	1.82	0.93	0.88
Perceived behavioural control	0.91	0.91	0.91	0.72
Attitude towards permanent income	0.89	0.89	0.89	0.67
Disposition to save	0.94	0.95	0.94	0.74
Disposition to borrow	0.70	0.75	0.73	0.41
Perceived benefits	0.92	0.93	0.92	0.76

Data Collection Procedures

The researcher used personally administered paper-based questionnaires in the collection of survey data because:

1. The researcher is able to create a physical connection with the participants thereby creating rapport, which aids communication about the research, particularly about the significance of the research.
2. The researcher is able to clarify or eliminate some misconceptions that the respondents may have.
3. There is a likelihood of having a response rate of almost 100% if the respondents agree to complete the questionnaire.

Data were collected from members of the Association of Market Women, Dressmakers, Hairdressers, Head Porters, and other informal sector worker groups in Accra as outlined in Section 3.4.4. Each questionnaire administered had a cover letter explaining the aim of the study, and a promise to respondents that the information they gave out was solely for academic purposes and that the confidentiality of the data provided was guaranteed. During data collection, the respondents were not coerced to provide any information. The respondents were assured that it was not mandatory to complete the questionnaire. Also, they were informed that they had the right to discontinue with the process if they wanted to.

Data analysis was performed without any preconceptions and alteration of the results

Data Analyses

Binary logistic regression

Research model 1 (see section 3.2.9) was analysed using binary logistic regression. According to Tharenou et al. (2007), logistic regression is a technique used to determine the effect of independent variables on a categorical dependent variable which has two or more categories. Tharenou et al. (2007) further state that the most commonly used logistic regression model is that which the dependent variable is dichotomous (two categories). This is termed as a binary logistic regression. The independent variable can have two categories, for instance willing to participate or not willing to participate. Kleinbaum and Klein (2010) state that the logistic regression model is popular because the logistic function ranges from 0 to 1.

Kleinbaum and Klein (2010) add that the model describes a probability, which is always a number between zero and one.

The logistic model is derived from the logistic function which is written as

$$z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

where the X_s are independent variables and α, β are constant terms representing unknown parameters.

Substituting the notation above into the logistic function;

$$z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k$$

$$f(z) = 1 / (1 + e^{-z})$$

$$= 1 / (1 + e^{-(\alpha + \sum \beta_i X_i)})$$

The probability function for the combination of factors or independent variables affecting the dependent variable can be written as:

$$P(D=1 | X_1, X_2, \dots, X_k)$$

$$= P(X)$$

The Model formula:

$$P(X) = 1 / (1 + e^{-(\alpha + \sum \beta_i X_i)})$$

Assuming X represents intention to participate, $P(X)$ represents the probability that a UWISG will participate in DCPS given the independent variables age, gender, income, family size, and health status. The logistic model can also be transformed into the Logit form, which represents the log of the ratio of the probability that some event will occur, over the probability that the same event will not occur (Kleinbaum & Klein, 2010). The Logit form is shown below;

$$\ln\left[\frac{P(X)}{1-P(X)}\right] = \ln\left[e^{(\alpha + \sum\beta_i X_i)}\right]$$

Logit form:

$$\text{logit } P(X) = \alpha + \sum\beta_i X_i$$

Where $P(X) = 1/(1+e^{-(\alpha + \sum\beta_i X_i)})$

The Odds Ratio (OR) is given as $P(X)/1-P(X)$ and is defined as the ratio of the probability that some event will occur, over the probability that the same event will not occur (Kleinbaum & Klein, 2010).

Structural equation modelling

Research model 2 (see section 3.3) will be analysed using the Partial Least Square (PLS) approach to Structural Equation Modelling (SEM) to test the hypotheses in the proposed research model. In performing the PLS-SEM analysis the two-step process recommended by Chin (1998) will be employed. The measurement model was initially tested to assess the reliability and validity of the variables in the proposed research model. If the measurement model is found to be satisfactory, the causal paths between the variables in the hypothesized model will be tested. In addition, an Importance-Performance Matrix analysis will be performed to assess the relative importance-performance of variables in predicting other variables.

The next section consists of a detailed explanation of Structural Equation Modelling and the justification for the use of the PLS-SEM methodology.

Structural Equation Modelling (SEM)

Structural Equation Modelling is a group of second-generation statistical techniques used for testing and estimating causal relationships between multiple variables based on statistical data and quantitative causal assumptions. SEM allows a researcher to model relationships between multiple independent and dependent variables and test these relationships simultaneously (Gefen, Rigdon, & Straub, 2011; Hair et al., 2012). Hair et al. (2014) outlined three characteristics of SEM that distinguish it from first generation statistical techniques such as regression and factor analysis. Firstly, SEM is able to estimate a series of separate but interdependent relationships simultaneously. Secondly, SEM is able to represent unobserved concepts in these relationships and account for measurement error in the estimation process. These unobserved variables or latent constructs are measured indirectly by examining consistency among multiple manifest variables, or indicators. Finally, with SEM the researcher is able to define a model that explains the entire set of relationships.

First generation techniques such as regression have limitations in analysing complex relationships. Regression is only able to capture the relationship between one dependent variable and several independent variables. However, in many practical situations there may be multiple dependent as well as independent variables complexly connected. SEM fills this gap by allowing the researcher to model several independent as well as dependent variables. The differentiation between dependent variables and independent variables no longer exists, rather the differentiation between exogenous and endogenous variables (exogenous variables explain endogenous variables) (Hair et al. 2014).

SEM is appropriate for the current study because the research model could be considered complex. SEM allows researchers to construct latent variables (unobserved variables) measured with indicators (manifest variables or items) and also model measurement error for the observed variables. This allows researchers to “statistically test a priori substantive/theoretical and measurement assumptions against empirical data (i.e. confirmatory analysis)” (Chin, 1998).

The Two-Step Approach to SEM Model Assessment

The two-step approach in PLS-SEM analysis recommended by Chin (1998) was adopted. Chin (1998) proposed that the measurement model should be tested first for reliability and validity. If the results of the tests are acceptable based on the thresholds proposed by previous researchers, then one may proceed to test the structural relationships between the latent variables in the research model. It is important to test the measurement model first because if the measurement items do not reliably measure the latent variables, then the possible relationships between the latent variables cannot be verified.

Measurement model assessment

Henseler et al. (2009), state that in assessing the measurement model, the researcher has to distinguish between reflective and formative models. A formative construct or composite refers to an index of a weighted sum of variables. In a formative construct, the indicators cause the construct, whereas in the more conventional reflective constructs, the indicators are caused by the latent variable. In this research all latent variables are modelled as reflective latent variables. Reflective latent variables are assessed using reliability, discriminant validity and convergent validity.

Reliability: In assessing the measurement model the first criterion that is checked is internal consistency reliability. Traditionally, internal consistency reliability has been assessed with Cronbach's α (Cronbach 1951). However, Cronbach's α underestimates reliability because it assumes that all items in a latent variable load equally on the latent variable. Cronbach's α is also sensitive to the number of items in the latent variable thereby underestimating reliability. Composite reliability and more recently ρ_A (Dijkstra and Henseler, 2015) have been proposed as alternatives to Cronbach's α . Hair et al. (2014) suggest that composite values between 0.6 and 0.7 are acceptable in exploratory research while in advanced stages values between 0.7 and 0.9 are preferred. Values less than 0.6 show a lack of reliability, while reliability values greater than 0.95 are undesirable because it means all the items are measuring the same phenomenon, and are therefore unlikely to be a valid measure of the construct (Hair et al., 2014).

The reliability of each indicator is also assessed using the factor loadings of each indicator. As a rule all indicator loadings should be statistically significant and should be above 0.708. Items with indicator loading less than 0.4 should automatically be deleted. Indicators with loadings between 0.4 and 0.7 should be considered for deletion if by deletion the composite reliability improves beyond the set threshold.

Discriminant validity: Discriminant validity is the degree to which a latent construct is truly distinct from other latent constructs. This implies that the latent construct is unique and is not represented by other latent constructs in the model. In assessing discriminant validity three methods have been proposed;

1. Indicators must load higher on the latent construct they are measuring than other latent constructs in the model. In other words, the factor loading of a latent construct must be higher than its cross loadings.
2. The Fornell-Larcker criterion which states that the AVE of a latent construct must be greater than the square correlations between that construct and any other.

3. 3. The Heterotrait-Monotrait ratio of correlations (HTMT) for assessing discriminant validity. In their recent paper, Henseler et al. (2015) highlighted some deficiencies in the Fornell-Larcker criterion and proposed the HTMT. The HTMT is an estimate for the factor correlation; to be able to discriminate between two factors the HTMT should be significantly smaller than one (Henseler et al. 2016). Henseler et al. (2015) recommended m values less than 0.85.

Convergent validity: Convergent validity is the extent to which an indicator positively correlates with other indicators of the same construct. It represents how well individual items of a construct converge in comparison to items measuring other constructs. Items of a particular construct must share a percentage of variance to indicate convergent validity. Convergent validity is assessed using the Average Variance Extracted (AVE). As a rule AVE values for each construct must be greater than 0.5 (Hair et al., 2014).

Structural Model Assessment

Once the measurement model has been shown to show satisfactory reliability and validity, the structural model can now be assessed. The structural model is assessed with the path coefficients, the coefficient of determination R^2 , predictive relevance Q^2 and f^2 effect sizes (Hair et al., 2014).

Path coefficients are assessed based on their significance, magnitude and sign. In order to determine the significance of each estimated path, a standard bootstrapping procedure was used with 5000 resamples drawn with replacement. A significant path coefficient implies that the path in question is significant or there exists a significant relationship between the two variables that are connected by that path. A negative value for the path coefficient signifies an inverse relationship.

The quality of the structural model is also assessed by its ability to predict endogenous constructs and this was assessed using the coefficient of determination R^2 and Stone-Geisser Q^2 (Hair et al. 2014). R^2 for endogenous variables is the squared correlation between the endogenous construct's actual and predicted values. R^2 values of 0.75, 0.5 and 0.25 are considered as substantial, moderate and weak respectively (Hair et al. 2014; Henseler et al. 2009). The predictive relevance of the model is tested with the Stone-Geisser Q^2 (Geisser 1975; Stone 1974); values that are greater than zero indicate predictive relevance.

Model quality and fit indices: The fitness of the model is assessed with the Average Path Coefficient (APC), Average R Square (ARS), Average Variance Inflation Factor (AVIF), and Standardized Root Mean Square Residual (SRMR). Kock (2013) suggests that both APC and ARS must be significant; at least at 5% and AVIFs should be less than 5. The SRMR value of zero is indicative of perfect fit however a cut-off value of less than 0.08 proposed by Hu and Bentler (1999) is adequate for indicating model fit (Henseler et al., 2016).

Statistical software

SPSS was used to analyse research model 1, while SmartPLS version 3 was used to analyse research model 2. Both software are very popular and most statisticians are conversant with them.

Main Findings of Results

Demographic Statistics

The population consisted of female members of the Association of Market Women, Dressmakers, Hair dressers, Head Porters, and other informal sector worker groups in Accra. The total number of members is 930.

The minimum sample size calculation and the adjustment for response rate indicated a sample size of 400. Four hundred (400) questionnaires were administered to members in the random sample. The

researcher acquired a sampling frame from the Association and used the RAND() function in MS Excel to construct the sample of 400 elements.

Characteristics of respondents

A total of 400 paper-based questionnaires were distributed, however, 299 questionnaires analyzed. A description of the sample is provided in Table 4.1. Regarding the 299 responses, 299 were female, representing about 100%. The modal age range for the respondents was 31-40 years (118 responses). A total of 25 respondents were aged 18-20, while 47 (15.7%) respondents were aged between 31 and 40 years. Sixty eight (22.7%) were between the ages of 41 to 50, while 41 (13.7%) were between the ages of 51 years or older. Regarding educational status, 127 respondents had secondary education as their highest educational qualification, 21 had a Diploma, 9 had a University degree, 2 had a Master’s degree, and 2 had a Doctoral degree. A total of 138 respondents had other qualifications. A total of 102 respondents reported using the

Table 4. 1 Demographic data on the respondents

Variable	Options	Number of Respondents	Percentage
Gender	Female	299	100
Age (years)	18-20	25	8.4
	21-30	47	15.7
	31-40	118	39.5
	41-50	68	22.7
	>51	41	13.7
Educational status	Secondary	127	42.5
	Diploma	21	7
	First Degree	9	3
	Masters	2	0.7
	Doctorate	2	0.7
	Other	138	46.2
Marital Status	Married	174	58.2
	Single	106	35.4
	Divorced	13	4.3
	Widow/widower	6	2
Monthly income	0-200	109	36.4
	201-500	60	20.1
	501-1000	78	26.1
	1001-2000	38	12.7
	>2000	14	4.7
Size of nuclear family	1-3	110	36.8
	4-6	150	50.2
	7-9	29	9.7
	>9	10	3.3
Chronic health condition	Yes	46	15.4
	No	253	84.6

Regarding marital status, 174 (58.2%) were married, 106 (35.4%) were single, 13 (4.3%) were divorced, and 6 (2%) were widowed. The monthly income structure of the respondents is as follows: 109 (36.4%) earn between 0 to 200 Ghana cedis, 60 (20.1%) earn between 201 to 500 Ghana cedis, 78 (26.1%) earn between 501 to 1000 Ghana cedis, 38 (12.7%) earn between 1001 to 2000 Ghana cedis, and 14 (4.7%) earn more than 2000 Ghana cedis. Regarding nuclear family size, 110 respondents (36.8%) had a nuclear family size of between 1 to 3, 150 respondents (50.2%) had a nuclear family size of between 4 to 6, 29 respondents (9.7%) had a nuclear family size of between 7 to 9, and 10 respondents (3.3%) had a nuclear family size of more than 9. Forty-six respondents (15.4%) had a chronic disease while 253 (84.6%) had no chronic disease.

Details of Analysis and Results

Preliminary examination of the data collected

The researcher followed the guidelines of Sekaran and Bougie (2016) by conducting a preliminary examination of the data to verify that the data was appropriate for statistical analysis and can produce meaningful results. As Hair et al. (2014) proposed, the researcher must conduct an initial examination of the data to allow for a thorough exploration of the individual variables and the relationships between these variables. The initial data analysis complements empirical analysis, but does not replace it (Hair et al., 2014). The preliminary analysis involves the following:

1. Checking the accuracy of the data input during the coding of the completed questionnaires.
2. The detection and treatment of missing values.
3. Testing the assumptions of the multivariate statistical technique being employed.

In this study, the researcher inspected the data to ensure precision and treated missing values. The data was also tested for normality to justify the use of PLS-SEM.

Accuracy of data input

A total of 321 questionnaires were retrieved from the respondents, representing a response rate of 80.25%. The high response rate was due to the cooperation of the respondents and the patrons of the Association, and the hard work of the research assistants. The responses from the retrieved questionnaires were coded and inputted in Microsoft Excel 2010. There was likelihood that the coded responses would have errors emanating from data entry, thus the researcher had to check the inputted data for errors. The questionnaires were initially numbered thus the researcher was able to manually match the responses on each questionnaire with the corresponding responses in the Excel file. The researcher effected corrections where necessary.

The Excel file was imported into IBM SPSS version 23 for data cleaning. Descriptive statistics of the data enabled the researcher to clean the data. The maximum values, minimum values and the means for items were used to identify any irregularities in the entry of the data. For instance, the minimum values for items that were measured with a Likert scale anchored between 1 and 5 had to be 1, not less than 1. Similarly, the maximum value was 5 not greater than 5. Any entry that was above 5 or below 1 was flagged, and the corresponding questionnaire retrieved to enable the researcher to re-enter the correct value.

Assessing missing values

There are instances where respondents may not complete the entire questionnaire but leave some portion

of the questionnaire uncompleted. Missing data is the instance when a respondent fails to answer one or more questions in a survey, or one or more values are omitted during data entry. Completed questionnaires that have missing data are normally rejected, but there may be other ways of treating them. The researcher opted to delete cases that have missing values, provided the number of cases remaining for analysis after deletion exceeds the minimum sample size.

The researcher identified significant missing values for 22 cases; the researcher deleted the 22 cases. After deletion, there were 299 cases remaining for analysis. Tables 4.2 to 4.4 show that there were no missing values in the final dataset.

Assessing normality

A basic assumption for most multivariate techniques is the assumption of normality. Normality is the extent to which the data corresponds to the normal distribution. There are two methods of SEM; the covariance-based SEM and the variance-based approach. The covariance-based SEM requires that the data show multivariate normality while the variance-based approach (PLS-SEM) does not require multivariate normality (Hair et al., 2014). The current study employs PLS-SEM because the initial analysis showed that the data were non-normal. Tables 4.2 to 4.4 below show that the data is non-normal since none of the values for both skewness and excess kurtosis is 0. The non-normal nature of the data collected justifies the use of PLS-SEM in this research.

Table 4. 2 Missing values, Skewness and Kurtosis (a)

		ATT1	ATT2	ATT3	ATT4	SN1	SN2	SN3	PBC1	PBC2	PBC3	PBC4
N	Valid	299	299	299	299	299	299	299	299	299	299	299
	Missing	0	0	0	0	0	0	0	0	0	0	0
Skewness		-1.365	-1.177	-1.237	-1.265	-.379	-.352	-.328	-1.630	-1.351	-.051	-1.278
Std. Error of Skewness		.141	.141	.141	.141	.141	.141	.141	.141	.141	.141	.141
Kurtosis		1.045	.713	.848	.865	-1.394	-1.403	-1.440	2.194	.946	-1.413	2.049
Std. Error of Kurtosis		.281	.281	.281	.281	.281	.281	.281	.281	.281	.281	.281

Structural equation modeling analysis

As stated in the previous chapters, the two-step approach to PLS-SEM analysis was used. The two-step approach to PLS-SEM was proposed by Chin (1998). Chin (1998) proposed that in performing PLS-SEM, the measurement model must be tested for validity and reliability before the structural model is tested. The structural model can be tested if the results of the initial tests are acceptable, viz., if they fall within the thresholds proposed by previous researchers.

Criticality must be attached to the results of the first step in PLS-SEM because if the measurement items do not reliably measure the latent variables, the possible relationships between the latent variables cannot be verified.

Table 4. 3 Missing values, Skewness and Kurtosis (b)

	API1	API2	API3	API4	DS1	DS2	DS3	DS4	DS5	DS6
N Valid	299	299	299	299	299	299	299	299	299	299
Missing	0	0	0	0	0	0	0	0	0	0
Skewness	-	-	-	-	.587	1.975	2.053	1.542	1.709	1.694
Std. Error of Skewness	1.405	1.263	1.381	1.452	.141	.141	.141	.141	.141	.141
Kurtosis	-	-	-	-	-	3.008	3.264	1.145	2.062	1.568
Std. Error of Kurtosis	1.278	1.049	1.198	1.529	1.161	.281	.281	.281	.281	.281

Table 4. 4 Missing values, Skewness and Kurtosis (c)

	DB2	DB3	DB 4	DB5	DB 6	PB1	PB2	PB3	PB4	INT1	INT2	INT3
N Valid	299	299	299	299	299	299	299	299	299	299	299	299
Missing	0	0	0	0	0	0	0	0	0	0	0	0
Skewness	-	-	-	-	-	-	-	-	-	-	-	-
Std. Error of Skewness	-.045	-.431	.815	1.022	.827	1.444	1.475	1.598	1.489	1.419	1.392	1.432
Kurtosis	-	-	-	-	-	1.323	1.649	1.893	1.626	1.110	1.075	1.255
Std. Error of Kurtosis	1.448	1.113	.796	-.214	.697	.281	.281	.281	.281	.281	.281	.281

Measurement model assessment

The parameters used in assessing the measurement model are reliability, discriminant validity, and convergent validity.

Reliability: Hair et al. (2014) defined reliability as “the extent to which a set of indicators of a latent construct is internally consistent in their measurements”. Reliability was assessed using Cronbach's alpha, composite reliability, and Dijkstra-Henseler's rho. The degree of reliability of a construct is indicative of the extent of interrelatedness of its items, viz., reliable constructs have indicators that measure the same thing. The de facto measure of reliability is Cronbach's alpha. However, Chronbach’s alpha has been shown to underestimate reliability (Hair et al., 2014) because its underlying assumption is that all items load equally on the construct. Proposed alternatives to Chronbach’s alpha are composite reliability or Dillon-Goldstein’s ρ and Dijkstra-Henseler's rho. Dijkstra-Henseler's rho is currently the

only consistent measure of reliability (Hair et al., 2014). A construct is reliable if its reliability measure is above 0.7 (Henseler, Hubona, & Ray, 2016; Nunnally & Bernstein, 1994)

The initial factor analysis showed that the loadings for items for perceived behavioural control and disposition to borrow were lower than the value 0.6 that most researchers suggest as a threshold. Consequently, their reliability values were lower than the threshold of 0.7. The researcher therefore decided to remove them from the model.

Table 4.5 shows that the remaining constructs exhibit reliability because their Chronbach alpha, rhoA, and composite reliability values were higher than the threshold of 0.7.

Table 4. 5 Reliability Tests

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Attitude towards DCPS	0.954	0.954	0.954	0.838
Attitude towards perm income	0.899	0.900	0.899	0.691
DCPS Intention	0.953	0.953	0.953	0.871
Disposition to Save	0.856	0.868	0.860	0.510
Perceived benefits	0.915	0.916	0.915	0.730
Subjective Norm	0.918	0.921	0.918	0.788

Convergent Validity: Convergent validity is the degree to which indicators of a specific construct converge or share a high proportion of variance (Hair et al. 2014). In other words, it is the degree to which a measure correlates positively with alternative measures of the same construct (Hair et al., 2014). Convergent validity ensures that items assumed to be measuring a particular latent variable measure the said variable and not any other latent variable (Urbach & Ahlemann, 2010).

The Average Variance Extracted (AVE) measure was used to test the convergent validity of the constructs. The factor loadings are another means of assessing convergent validity. AVE measures the degree of variance that the latent variable captures from the items it measures relative to the degree of variance associated with the measurement errors (Aibinu & Al-Lawati, 2010). A construct is said to exhibit convergent validity if the AVE value is greater than 0.5 (Hair et al., 2014), viz., at least 50% of the measurement variance is captured by the latent variables. Table 4.5 shows that all the constructs exhibit convergent validity because all the AVE values are greater than 0.5.

Discriminant validity: Discriminant validity was assessed using the Fornell-Larker criterion, which stated that the AVE of each latent construct should be greater than the highest squared correlations between any other construct (Fornell & Larcker, 1981). Table 4.6 shows that all the constructs exhibit discriminant validity.

Structural model assessment

The results of the tests of the measurement model showed that the selected constructs exhibited reliability and validity, thus the researcher proceeded to test the structural model. The structural model was assessed based on the sign, magnitude, and significance of the path coefficients of each hypothesised path. Bootstrapping was done to determine the significance

Table 4. 6 Tests for Discriminant validity

	Attitude towards DCPS	Attitude towards perm income	DCPS Intention	Disposition to Save	Perceived benefits	Subjective Norm
Attitude towards DCPS	0.915					
Attitude towards perm income	0.803	0.831				
DCPS Intention	0.905	0.819	0.933			
Disposition to Save	-0.359	-0.405	-0.411	0.714		
Perceived benefits	0.807	0.826	0.832	-0.422	0.855	
Subjective Norm	0.293	0.326	0.338	-0.272	0.357	0.888

of each estimated path. Bootstrapping is the process of drawing a large number of re-samples with replacement from the original sample, and then estimating the model parameters for each bootstrap re-sample. The standard error of an estimate is inferred from the standard deviation of the bootstrap estimates (Henseler et al., 2016). The coefficient of determination (R^2) was used to determine the explanatory power of the structural model, viz., its ability to predict the endogenous constructs. The results of the structural model assessment are presented in Table 4.7 and Figure 4.1.

Table 4. 7 Hypotheses tests

Hypothesised path	Path Coefficient	T Statistics (O/STDEV)	P Values
Attitude towards DCPS -> DCPS Intention	0.995	33.882	
Attitude towards perm income -> DCPS Intention	0.039	1.371	0.171
Disposition to Save -> DCPS Intention	-0.047	3.068	0.002
Perceived benefits -> DCPS Intention	-0.046	1.714	0.087
<u>Subjective Norm -> DCPS Intention</u>	<u>0.038</u>	<u>2.090</u>	<u>0.037</u>
$R^2 = 1$, SRMR = 0.05			

Attitude towards DCPS was found to have a significant positive effect on DCPS Intention ($\beta = 0.995$, $p = 0.000$). However, attitude towards permanent income was found not to have a significant effect on DCPS Intention ($\beta = 0.039$, $p = 0.171$). Disposition to save was found to have a significant negative effect on DCPS Intention ($\beta = -0.047$, $p = 0.002$). Perceived benefits were found to have an insignificant effect on DCPS Intention ($\beta = -0.046$, $p = 0.087$). Subjective norm was found to have a significant positive effect on DCPS Intention ($\beta = 0.038$, $p = 0.037$).

Overall, the proposed model accounted for 100 per cent of the variance in DCPS intention (R^2 of 1). The standardized root means square residual (SRMR) was used to assess model fit in PLS. The SRMR

value for the model was 0.05; a value less than 0.08 is generally considered a good fit (Hu & Bentler, 1999). The SRMR value of 0.05 shows that the model fits the data well.

Figure 4.1 shows the path coefficients of the explanatory constructs.

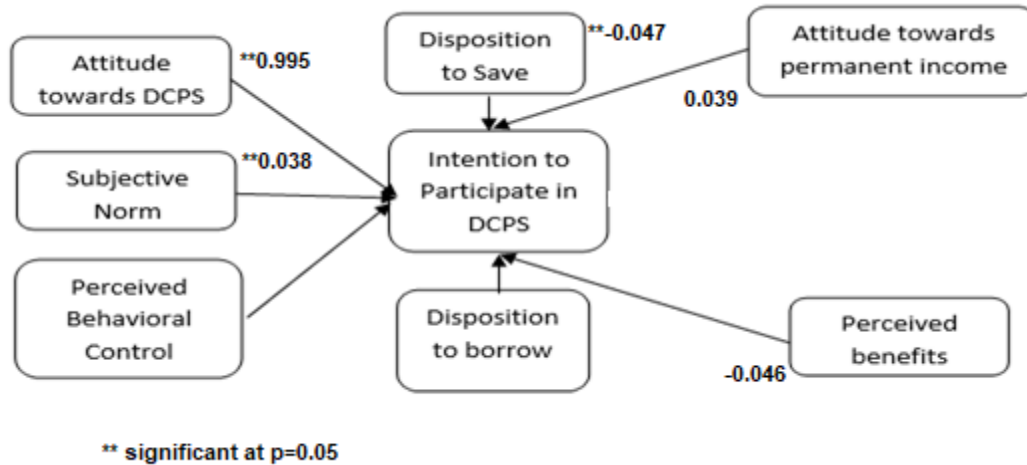


Figure 4. 1 Model showing path coefficients

The next section will discuss the results of the binary logistic regression.

Binary logistic regression

Results from the binary logistic regression analysis using SPSS v23 showed that the model was significant in measuring the dependent variable intention to run. Table 4.8 shows that the significance value (p-value) associated with the chi-square statistics is 0.000, which means that there is a very strong evidence of rejecting the null hypothesis of no fit; the model, therefore, has a good fit (Kothari, 2004). Table 4.9 shows the Nagelkerke R square value for the model; a value of 0.082 shows that the proposed model accounted for 8.2 per cent of the variance in DCPS intention (Nagelkerke, 1991).

Table 4. 8 Omnibus Tests of Model Coefficients

Chi-square	df	Sig.
10.161	1	.000

Table 4. 9 Model Summary

-2 Log likelihood	Nagelkerke R Square
281.233a	.082

The result of the Hosmer and Lemeshow test shown in Table 4.10 also confirms that the model has a good fit. An insignificant p-value for the Hosmer and Lemeshow test is indicative of good fit (Hosmer & Lemeshow, 2013).

Table 4. 10 Hosmer and Lemeshow Test

Chi-square	df	Sig.
10.161	8	.254

The classification table (Table 4.11) shows the accuracy of the prediction of the regression model. 0 represents a “yes” DCPS intention while 1 represents a “no” DCPS intention. The table shows that out of a total of 240 observed strikes of “yes”, the model was able to predict 238 strikes correctly, which represents an accuracy rate of 99.2%. On the other hand, out of a total of 59 observed strikes of “no”, the model was able to predict 3 strikes correctly, which represents an accuracy rate of 5.1%. Overall, the accuracy rate of prediction of “yes” and “no” strikes of the model is 80.6%.

Table 4. 11 Classification Table

Observed		Predicted		
		Int		Percentage Correct
Int	0	0	1	
		0	3	56
	1	2	238	99.2
Overall Percentage				80.6

Table 4.12 shows the model coefficients and the significance levels. The beta (B) values indicate the log odds of the effect of a unit change in the explanatory variable on the dependent variable DCPS intention. For instance, for each unit change in age, there is a -.138 log odds change in DCPS intention. The Exp(B) column shows the exponential of the log odds per beta

Table 4. 12 Variables in the equation

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
AGE	-.138	.140	.967	1	.325	.871	.661	1.147
MAR	-.121	.144	.710	1	.399	.886	.669	1.174
EDU	.089	.065	1.886	1	.170	1.093	.963	1.241
INCM	-.311	.121	6.569	1	.010	.733	.578	.930
HCOND	.774	.375	4.259	1	.039	2.168	1.040	4.521
FAM	.029	.163	.031	1	.861	1.029	.747	1.418
Constant	1.809	.789	5.261	1	.022	6.106		

(B) value. In real terms, it means that for each unit change in age, there is a 0.871 (87.1%) change in DCPS intention. The table also shows the significance (Sig.) levels of each explanatory variable at 5% error (95% confidence interval). It can be inferred from the table that p values of .010 and .039 for income level and health condition mean that we can reject the null hypothesis of no relationship. Thus, controlling for all the other variables have a significant influence on DCPS intention.

Results of hypothesis tests

Table 4.13 shows that five of the alternate hypotheses were accepted and eight were rejected.

Table 4. 13 Results of hypotheses tests

Hypothesis	Relationship	p value	Result (alternate)
H1	Age >> DCPS intention	0.325	Rejected
H2	Marital status >> DCPS intention	0.399	Rejected
H3	Income level >> DCPS intention	0.010	Accepted
H4	Education >> DCPS intention	0.170	Rejected
H5	Family size >> DCPS intention	0.861	Rejected

H6	Health status >> DCPS intention	0.039	Accepted
H7	Perceived benefits >> DCPS intention	0.087	Rejected
H8	Attitude towards perm. Income >> DCPS	0.171	Rejected
H9	Disposition to save >> DCPS intention	0.002	Accepted
H10	Disposition to borrow >> DCPS intention	nil	Rejected
H11	Attitude towards DCPS >> DCPS intention	0.000	Accepted
H12	Subjective norm >> DCPS intention	0.037	Accepted
H13	Perceived beh. control >> DCPS intention	nil	Rejected

Cross tabulations

This section presents the results of cross tabulations between the demographic variables and DCPS intention.

Table 4.14 shows that with regard to age, the majority of respondents who had the intention of participating in DCPS were in the 31-40 age group (32.8%). The intention to participate in DCPS for the other age groups is as follows; 41-50 (17.7%), 21-30 (13%), > 50 (9.7%), and 18-20 (7%).

Table 4. 14 Age and Intention crosstabulation

Count		INT		Total
		.0	1.0	
AGE	18-20	4	21	25
	21-30	8	39	47
	31-40	20	98	118
	41-50	15	53	68
	>50	12	29	41
Total		59	240	299

Table 4.14 presents a crosstabulation of age and DCPS participation intention. Regarding age, most of the respondents who had the intention of participating in DCPS were in the 31-40 age group (32.8%). The intention to participate in DCPS for the other age groups is as follows; 41-50 (17.7%), 21-30 (13%), >50 (9.7%), and 18-20 (7%). Additionally, the percentages of respondents that intended to participate in DCPS compared to those who had no intention to participate in DCPS per category are as follows; 18-20 (84%), 21-30 (83%), 31-40 (83%), 41-50 (78%), and >50 (71%). It implies that for the age range of 18-20, 84% had the intention to participate in DCPS while 16% did not have the intention. Similarly, for the age range of 21-30, 83% had the intention to participate in DCPS while 17% did not have the intention. The distribution of the respondent is shown in the Figure 4.2. Figure 4.2 shows the distribution of respondents' participation intentions across the various age categories.

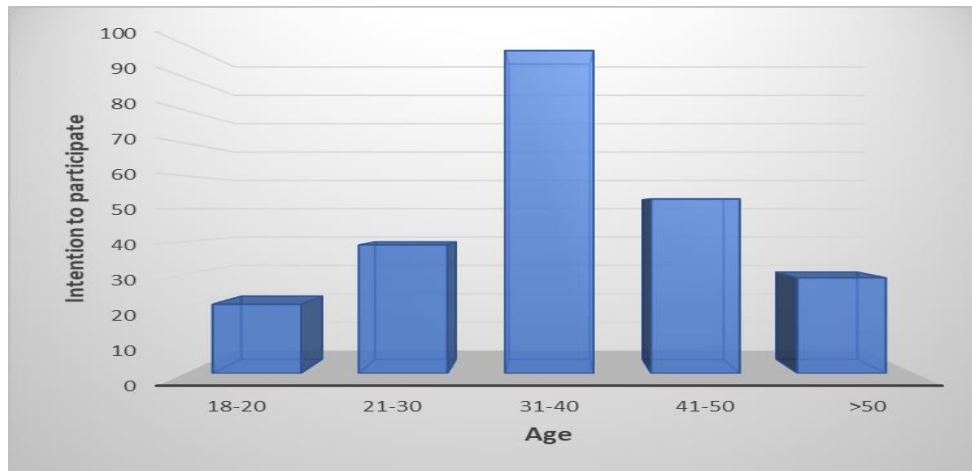


Figure 4. 2 Age and intention to participate

Table 4.15 shows a crosstabulation of marital status and DCPS participation intention

Table 4. 15 Marriage and Intention crosstabulation

Count	INT		Total
	.0	1.0	
Married	35	139	174
Divorced	2	11	13
Single	18	88	106
Widowed	2	4	6
Total	59	240	299

Table 4.15 shows that regarding marital status, most of the respondents depicted in figure 4.3 who had the intention of participating in DCPS were married (46.5%). The intention to participate in DCPS for the other categories is as follows; single (29.4%), divorced (3.7%), and widowed (1.3%). The percentages of respondents that intended to participate in DCPS compared to those who had no intention to participate in DCPS per category are as follows; married (80%), divorced (85%), single (83%), and widowed (67%).

Figure 4.3 shows the distribution of respondents’ participation intentions across the various marital status categories.

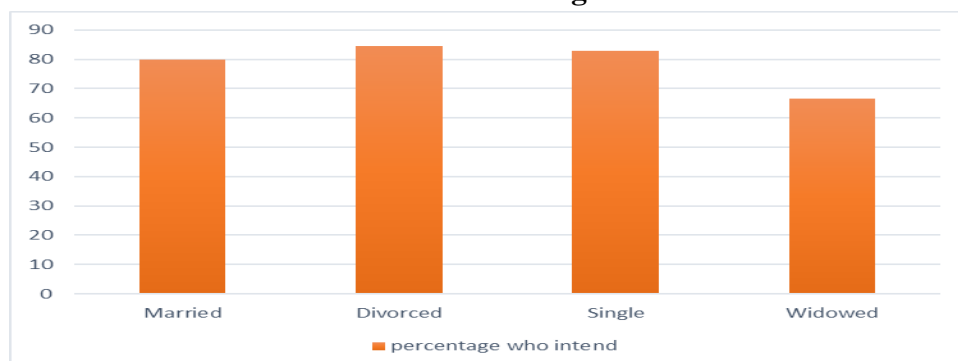


Figure 4. 3 Marital Status and intention to participate

Table 4.16 shows a crosstabulation of educational level and DCPS participation intention.

Table 4. 16 Education and Intention crosstabulation

Count		INT		Total
		.0	1.0	
	Secondary	27	100	127
	Diploma	5	16	21
	1 st Degree	3	6	9
	Masters	0	2	2
	PhD	1	1	2
	Other	22	116	138
Total		59	240	299

Table 4.16 presents a crosstabulation of educational background and DCPS participation intention. Regarding educational background, most of the respondents as shown in figures 4.4 and 4.5 who had the intention of participating in DCPS had secondary school certificates (33.4%) and “other” qualifications (38.8%). The intention to participate in DCPS for the other categories is as follows; diploma (5.4%), first degree (2%), Masters (0.6%), and PhD (0.3%). The percentages of respondents that intended to participate in DCPS compared to those who had no intention to participate in DCPS per category are as follows; secondary (78.7%), diploma (76.2%), first degree (66.7%), Masters (100%), PhD (50%), and “other” (84%).

Figure 4.4 shows the distribution of respondents across the various educational level categories.

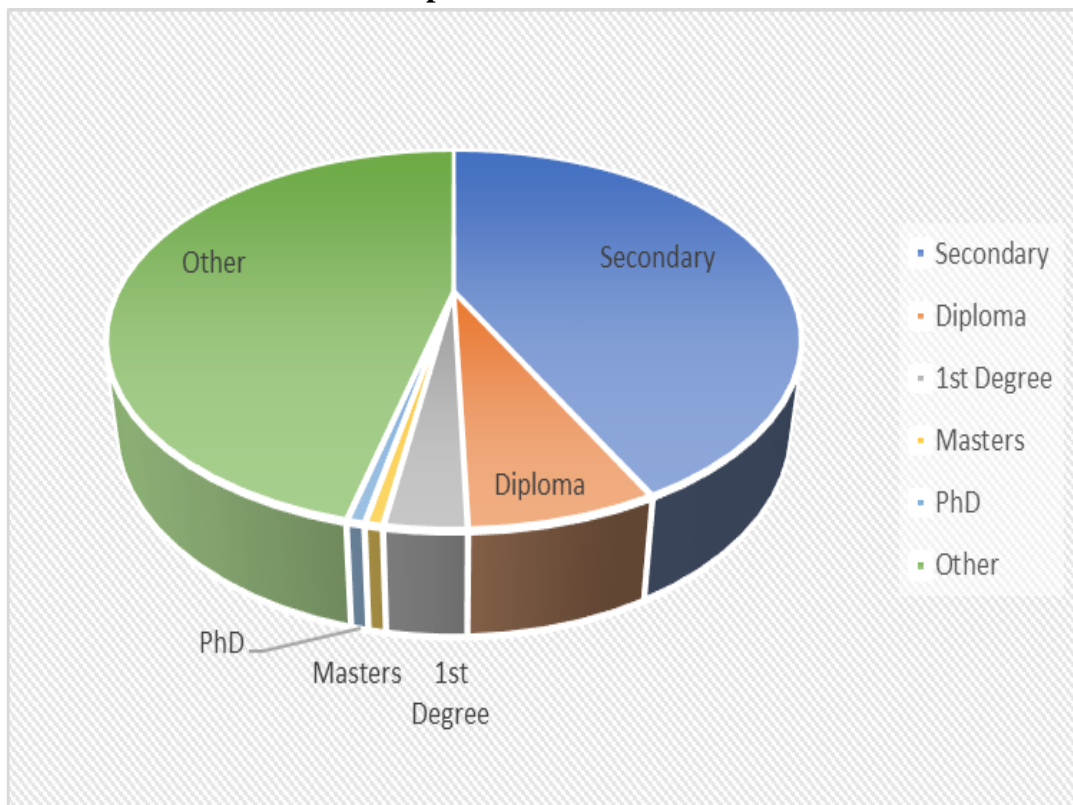


Figure 4. 4 Distribution: Educational level

Figure 4.5 shows the distribution of respondents' participation intentions across the various educational level categories.

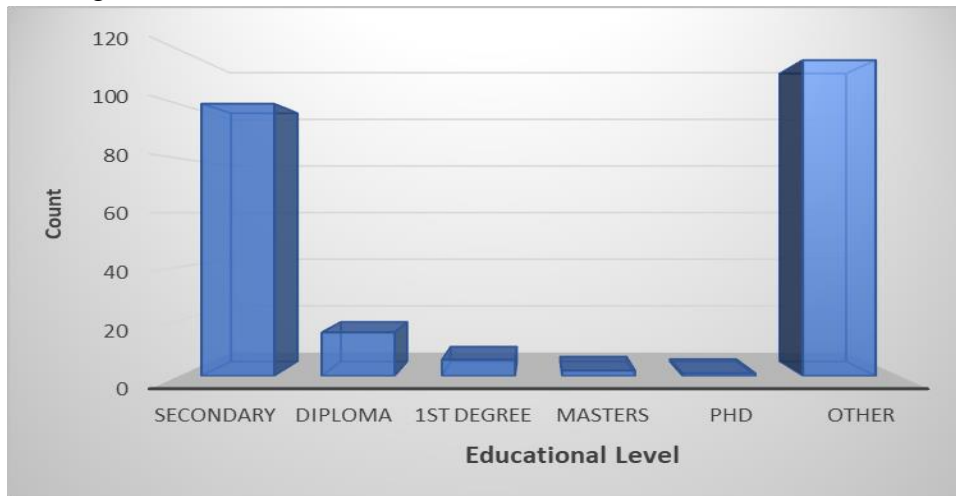


Figure 4. 5 Educational level and intention

Table 4.17 shows a crosstabulation of income level and DCPS participation intention.

Table 4. 17 Income and Intention crosstabulation

Count	INT		Total
	.0	1.0	
0-200	7	102	109
201-500	18	42	60
501-1000	19	59	78
1001-2000	11	27	38
>2000	3	11	14
Total	59	240	299

Table 4.17 shows a cross tabulation of income level and DCPS participation intention

Regarding income, most of the respondents who had the intention of participating in DCPS earned between 0 and 200 Ghana cedis (36%). The intention to participate in DCPS for the other categories is as follows; 201-500 (14%), 501-1000 (19.7%), 1001-2000 (9%), and above 2000 (3.7%). The percentages of respondents that intended to participate in DCPS compared to those who had no intention to participate in DCPS per category are as follows; 0-200 (93.6%), 201-500 (70%), 501-1000 (75.6%), 1001-2000 (71.1%), and above 2000 (78.6%).

Table 4.18 shows a crosstabulation of health condition and DCPS participation intention

Table 4. 18 Health condition and Intention crosstabulation

Count		INT		Total
		.0	1.0	
	No Chronic disease	45	208	253
	Chronic disease	14	32	46
Total		59	240	299

Table 4.18 shows that regarding health condition, most of the respondents who had the intention of participating in DCPS did not have a chronic disease (69.6%), while 10.7% of the respondents who had the intention of participating in DCPS had a chronic disease. The percentages of respondents that intended to participate in DCPS compared to those who had no intention to participate in DCPS per category are as follows; no chronic disease (82.2%) and chronic disease (69.6%).

Table 4.19 shows a crosstabulation of family size and DCPS participation intention.
Table 4. 19 Family size and Intention crosstabulation

Count		INT		Total
		.0	1.0	
1-3	1-3	19	91	110
	4-6	32	118	150
	7-9	8	21	29
	>9	0	10	10
Total		59	240	299

Table 4.19 presents a cross tabulation of family size and DCPS participation intention. Table 4.19 and depicted in figure 4.6 shows that regarding family size, most of the respondents who had the intention of participating in DCPS had a nuclear family size of 4-6 (39.5%) and 1-3 (30.4%). The intention to participate in DCPS for the other categories is as follows; 7-9 (7%) and >9 (3.3%). The percentages of respondents that intended to participate in DCPS compared to those who had no intention to participate in DCPS per category are as follows; 1-3 (82.7%), 4-6 (78.7%), 7-9 (72.4%), and >9 (100%).

Figure 4.6 shows the distribution of respondents across the various family size categories.

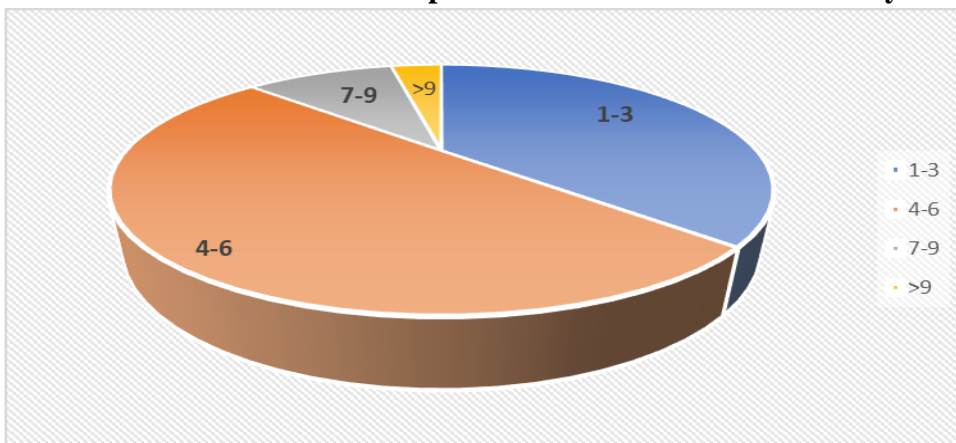


Figure 4. 6: Distribution: Family size

Figure 4.7 shows the distribution of respondents’ participation intentions across the various family size categories.

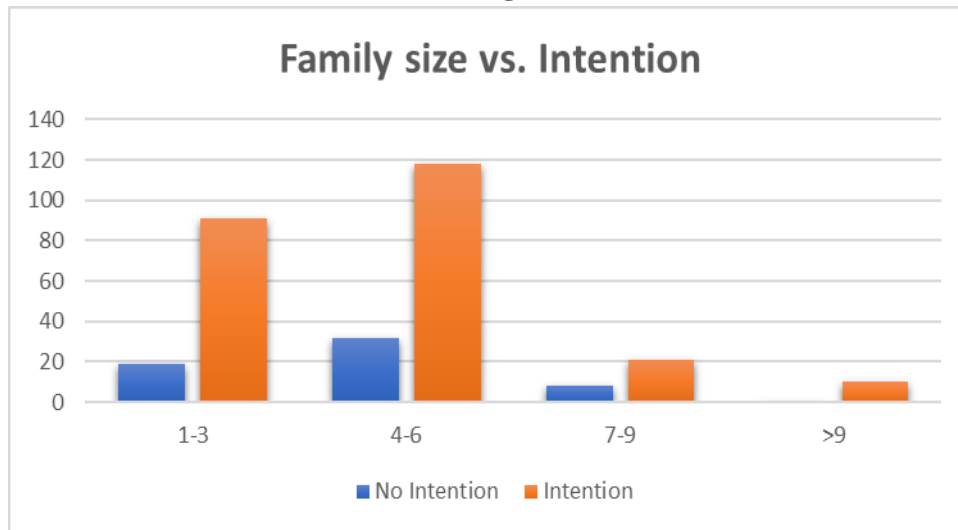


Figure 4. 7 Family size vs intention

Table 4.19 presents a cross tabulation of family size and DCPS participation intention.

Table 4.19 linked to Figures 4.6 and 4.7 shows that regarding family size, most of the respondents who had the intention of participating in DCPS had a nuclear family size of 4-6 (39.5%) and 1-3 (30.4%). The intention to participate in DCPS for the other categories is as follows; 7-9 (7%) and >9 (3.3%). The percentages of respondents that intended to participate in DCPS compared to those who had no intention to participate in DCPS per category are as follows; 1-3 (82.7%), 4-6 (78.7%), 7-9 (72.4%), and >9 (100%).

Table 4.20 below shows a crosstabulation of income level and age.

		AGE					Total
		18-20	21-30	31-40	41-50	>50	
INC M	.						
	0-200	13	16	49	21	10	109
	201-500	6	11	24	14	5	60
	501-1000	3	15	29	19	12	78
	1001-2000	3	4	12	13	6	38
	>2000	0	1	4	1	8	14
Total		25	47	118	68	41	299

Table 4.20 above shows a crosstabulation of income level and age.

The crosstabulation of income and ageshows that the very low-income category had the highest percentage of respondents between the age of 31 and 40; 45% of respondents compared with 9% of those in the higher age category of > 50 years The same income level is an indication of a tepid attitude towards participation in a DCPS as the group advance in age. This can be observed for all age groups and income levels as indicated in the table

4.3 Summary of Results

Some significant findings of the study are (i) an inverse relationship between disposition to save and intention to participate in DCPS. The inverse relationship implied that most of the respondents would prefer to probably put money in their savings or investment accounts rather than contributing to DCPS. The study also found the age variable to be an insignificant influencer of DCPS adoption intention. This result defies the logical hypothesis that age should influence DCPS adoption intention because as people get older, they are more likely to participate in DCPS especially after the age of 40. The results point to the fact that the life cycle theory of pensions and the permanent income hypothesis may not hold in certain settings, such as the context of the current study.

Conclusions and Practical Recommendations

The insignificance of the perceived benefits variable and its conjectured impact on perceived low net pension wealth is of great importance. This result implies that there is a likelihood that most urban women in the informal sector have the perception that DCPS is not beneficial, thus their interest in participating in DCPS will be diminished.

The perceptions of low net pension wealth may emanate from observed low pension income among pensioners or reports indicating such a phenomenon. It is important that this negative perception is changed to a positive perception to induce participation in DCPS. It is also important to note that this perception may emanate from observed low pension income of pensioners on the Tier 1 pension scheme which is a defined benefit scheme. The Tier 1 and Tier 2 pension schemes vary in several ways; thus, it is important that workers are educated on the differences between these two pension schemes. It is also important that the Tier 1 pension scheme is structured in a way to provide realistic benefits to pensioners; this will encourage workers in the informal sector to sign up to the voluntary pension plans. Hu and Stewart (2009) stated that several strategies may be adopted to encourage informal sector workers to participate in pension schemes. These strategies include;

- Flexible terms for informal sector workers: requirements to join government pension schemes need not be too strict for informal sector workers
- Providing monetary incentives to participate: provision of tax reliefs on pension contributions
- Financial education: educating informal sector workers on the benefits of pension schemes
- Utilization of existing (non-pension) infrastructure as points of presence for the provision of pension services to the informal sector
- Utilizing existing (non-pension) financial sector institutions such as microfinance institutions that have existing linkages with the informal sector.

Financial education should not be limited to informal sector workers but the general public because subjective norm was found to have a significant influence on DCPS participation intention. Friends and family of informal sector workers who are financially literate are more likely to encourage participation in DCPS compared to those who are not financially literate.

The current study has shown the serious impact of perceived low pension wealth such that it diminishes the influence of health status, disposition to save, and income level.

The researcher proposes that, in the Ghanaian context, the following policy/strategic interventions should be considered to improve the DCPS participation rates among urban women in the informal sector.

i. Some Informal Sector workers who do not find DCPS beneficial because of perceived low benefits will most likely not participate in DCPS. Policy makers will have to find a more attractive pension scheme for such group of low-income earners in the informal sector which should be mandatory with tax incentives. Government should be able to provide regulatory guidelines to encourage insurance companies implement provisions in the National Law Act 766 and also design other appropriate products for convenience participation of this group of workers.

ii. Respondents who had a chronic disease showed disinterest in participating in DCPS may be due to a reduced life expectancy as a result of their health status. As mention in this document it is quite rational for a sick person to have expectations of reduced longevity and therefore be disinterested in participating in a pension scheme(s).

Products which should be designed by participating Insurance Companies for informal sector workers as suggested in (i) above should take into consideration flexible products such as sickness and death benefits such that individuals with chronic diseases would be encouraged to participate and access the fund when necessary. Government should also consider provision of free Health Insurance for such group of low-income earners in the Informal Sector since everyone has the right to healthy life according to United Nations Declarations. This will require provision in the National Budget to cater for such social intervention.

iii. Some of the respondents with chronic diseases would prefer to probably put money in their savings or investment accounts rather than contributing to DCPS. This might be due to their limited knowledge and understanding of pension and long-term saving products or perceived low pension.

There is an obvious knowledge gap in appreciation of retirement benefit hence there will be the need for vigorous financial education to help informal sector workers and their close associates, friends and family members to understand saving enough for their retirement in order to enable them maintain their current consumption style after retirement.

The Financial education can be undertaken by trained microfinance managers or other officers to explain the benefits of DCPS in order to increase public knowledge and awareness and thereby expand pension coverage among informal sector workers. The training could be done by Microfinance institutions, the NPRA, Gender, Children and Social Protection Ministry and Local Government and Rural Development Ministry in Ghana.

iv. Workers with positive attitude towards DCPS are more likely to participate in DCPS however Tier 3 of the National Law ACT 766 in Ghana is not mandatory. Policy makers may have to consider amendment to the law to include mandatory contribution by informal sector workers to the scheme. This mandatory scheme should encourage informal sector workers to contribute daily a percentage of the income and Government should match up where necessary in order to enable contributors meet the minimum wage. (for instance, participants can be encouraged to contribute GHC5 of their daily income and Government should support such contributors by matching their contribution with GHC2.50 of their daily income to make up GHC7.50) into the Tier 3 fund. Participants should be encouraged to contribute daily to the scheme which should be of two accounts (for instance account A&B) whereby the contributor can access or withdraw for a maximum of two or three times in one year from account 'A' but account 'B' is made inaccessible or does not allow premature withdrawal before the contributor attains the retirement age. (55-60 as in Ghana). There could even be a third account where participants could be allowed to access anytime. Contributions can be paid into member's registered account by mobile money, express pay, banks, accounts offices and other easy means of payment by participants.

Members should be mandated to buy annuities with at least 50% of the matured fund at retirement and the rest as lump sum. More importantly, matching a retirement saving fund with a flexible term of contribution of a fixed amount daily by such informal sector workers with very low income into a registered personal account would ensure minimum pension.

Again, taking into account the almost non-existent or not well-developed Annuity market in Ghana, Government should work with experts to expedite the development of the annuity market for such purpose.

The legalization of mandatory participation will ease the pressure on the informal sector workers who may have difficulty in making a choice of the appropriate pension scheme and also Government who may have too many vulnerable old aged persons to take care of when they retire.

v. Legalizing mandatory contribution may have to take into account the result of this study that found the age variable to be an insignificant influencer of DCPS adoption intention. This result defies the logical hypothesis that age should influence DCPS adoption intention because as people get older, they are more likely to participate in DCPS as they get closer to the retirement age as noted above. Such group of informal sector workers may either be financially too poor to save toward old age retirement and therefore will require social intervention by Government or due to the age group of 31-40 years they are reluctant to set aside money for their retirement as they might think retirement is many years away, here much education would be needed to deal with this challenge.

vi. There is a need for Government to also cogitate a social assistance system of a fully financed old age benefit through the National Budget for such informal sector workers whose income may fall below National minimum wage. This would dignify such group of persons in the society at retirement. Policy makers would have to work determine the criteria for the distribution of such social assistance.

Recommendations for Further Research

The composition of the population to an extent influenced the results. Although a probability sample was used, the population seemed to be skewed towards certain categories, for instance the 31 to 40-year group which could create sampling bias. In the future, a quota sampling technique may be used to prevent bias emanating from specific categories.

Due to budget constraints, the population was specific to only the Greater Accra region of Ghana. There are currently 16 regions in Ghana thus the population may not be representative of the whole country. Future research should consider a population from other regions in Ghana.

The effect of gender was not considered in the study due to the objectives set by the researcher. The researcher focused on women because of the prevalence of poverty among the feminine elderly people in Ghana compared to the male elderly population. Future research should consider the effect of gender on DCPS participation intention.

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