Effect of Debt Capability on the Indebtedness of **Employees in the Formal Sector in Kenya**

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ABSTRACT

This study examined the relationship between debt capability and indebtedness of formal sector employees in Kenya. Positivism paradigm was used in this study. The study adopted a cross sectional and correlational descriptive research design. The study targeted about 2.4 million employees in the formal sector. Three stage sampling was done, first, cluster sampling and then, stratified sampling and finally random sampling. The study used primary data collected by use of self-administered questionnaires. A pilot test of the questionnaire was conducted on 40 respondents to check its validity and reliability. 1000 questionnaires were circulated. Of the returned, 581 questionnaires were consider usable. Cronbach's alpha for likert type items was found reliable (over 0.7). Data analysis used IBM SPSS statistics 21 for descriptive and correlation analysis. Further, OLS Multiple regression models were used to examine the relationship between debt capability and indebtedness. The findings reveal that debt capability have a significant effect on indebtedness.

Keyword: Debt capability, Indebtedness, Formal Sector

1. INTRODUCTION

Personal finance researchers have referred to taking goods and services on credit or borrowing money by individuals by terms such as household debt, consumer debt, personal loan and personal debt (Chawla & Uppal, 2012). Before individuals take on debt, debt decisions are involved. Classic economic and finance theories propound that rational individuals make optimal financial decisions in the area of savings. investing, and borrowing (Cynamon & Fazzari, 2008). In fact, borrowing decisions are important for aggregate consumption, asset demand and financial stability. The problems starts when the amounts borrowed are disproportional to the borrower's income (Georgarakos, Lojschova, & Ward-Warmedinger, 2010). Debt is a common item in the personal budgets, partly due to the greater availability of credit (Ironfield-Smith, Keasey, Summers, Duxbury, & Hudson, 2005).

Debt capability refers to the capacity to make debt decisions given a set of financial skills, education and information (Ajzerle, Brimble, & Freudenberg, 2013). Debt capability covers four areas, namely, managing borrowed money, planning, making prudent buying decisions and staying informed about financial realities. A debt capable person should therefore be able to keep track of their own finances, and plan their future financial commitment (Mbekomize & Mapharing, 2015).

According to ILO(2010) formal sector refers to the section of the economy which provided jobs that are subject to national legislation, income tax, social protection or entitlement to benefits such as annual leave, group life and medical insurance, pension and gratuity. The sector have written rules, agreement and job description where employees are required to work known and fixed hour for agreed fixed salaries.

2. PROBLEM STATEMENT

Majority of debt contract or agreements are paid without difficulty and results in benefits for all parties to the agreement (Russell, Maitre, & Donnelly, 2011). However, personal debt can lead to negative consequences. Indebtedness can be a threat to the economy (Dynan, 2012; Papadimitriou, Shaikh, Santos, & Zezza, 2002; Seccareccia, 2001) for instance because it leads to non performing loans, inequality and unemployment. The 2007/08 financial crisis is a good example. At individual level, indebtedness can lead to negative consequences such as divorce, mental disorders, drug abuse, homelessness and even suicide (Frade & Abreulopes, 2009; Hossain, 2013)

3. OBJECTIVE

The objective of the study was to explain the relationship between debt capability and indebtedness of formal sector employees in Kenya.

4. HYPOTHESIS

There is no significant relationship between debt capability and indebtedness of formal sector employees in Kenya.

5. METHODOLOGY

The study was conducted between March and May 2016. The data was collected via self-administered questionaire from a sample of 1,000 working Kenyans. The study collected a number of socio-economic characteristics of the employee such as age, gender, marital status, region of workstation, family size and income. Debt capability was operationalised using eleven questions. The question assessed respondents' ability to apply optimal debt management skills and practices. In question one, respondents were requested to indicate the format of their spending plan. The other ten questions were likert scale where respondents were requested to rate their debt capability in a scale of 1 to 5. Three dimensions of indebtedness were used. First, Debt Service Ratio (DSR) was computed using total debt repayment and gross disposable income. Second, Debt Income Ratio (DIR) was computed using total outstanding loan and gross disposable income. Finally, aggregate indebtedness was found by multiplication of DSR and DIR.

The study used a positivism research philosophy, since the study was based on both existing theory and hypothesized relationship. A cross-sectional, co relational descriptive research design was used to accept the hypothesised relationship. The population of the study comprised about 2.4 Million employees in the formal sector in Kenya (KNBS, 2015). A three stage sampling design was used, First, the entire population was clustered into eight historical provinces. Three provinces (coast, central and Nairobi) were purposively selected while finally respondents were randomly targeted. Using Cochran's 1977 formulae, a minimum of 384 respondents were expected. Data analysis was carried out using SPSS version 21.

6. RESULTS

The questionnaire was pretested with 40 employed, Master of Business Administration (MBA), first years students from the University of Nairobi, Mombasa Campus. Cronbach's alpha was used to measure the reliability of the data collection instrument (internal consistency) where the emphasis was on all likert scale questions in the questionnaire. The ten likert scale questions had Cronbach's alpha of 0.817 which is good. Cronbach's alpha of less than 0.5 is unacceptable, between 0.5 and 0.6 is poor, between 0.6 and 0.7 is questionable, between 0.7 and 0.8 is acceptable, between 0.8 and 0.9 is considered good while over 0.9 is excellent (George & Mallery, 2003).

The targeted respondents in the study were employees working in the formal sector in Kenya. 1,000 questionnaires were distributed; only 648 were returned. Of the returned questionnaires, 67 were rejected because they were not satisfactorily complete. Similar studies have sample the same number of respondents. For example, Bhushan and Medury (2013) by structured questionnaire, 516 respondents were realized. Another related study by Schicks (2012) which measured the over-indebtedness of micro-borrowers in Ghana conducted an in-depth survey of 531 micro debtors. Yet another study by Zakaria, Jaafar & Marican (2012) determined the relationship between financial behaviour and financial position of urban households in Malaysia used 916 questionnaires. While van Ooijen and van Rooij (2014) in their study on mortgage risks, debt literacy and financial advice finally settled on sample of 459 households.

Item	VLE	LE	ME	HE	VHE	Mean	Std. Dev.
	%	%	%	%	%		
I prepare a budget for the amount borrowed which I follow strictly	18.1	13.9	26.7	18.8	20.5	3.12	1.376
I discuss the budget for the borrowed money with my family	33.9	15.5	15.7	18.2	16.8	2.70	1.496
I periodically, e.g. yearly, review my total financial position/net-worth	21.9	12.7	21.7	21.1	22.6	3.08	1.449
before any borrowing decision							
I track all my expenses using the budget monthly	25.7	18.5	22.1	15.8	17.9	2.77	1.398
I usually compare my pay-slip deductions with the loan statement provided	17.8	11.6	18.9	22.9	28.9	3.33	1.419
by the lender							
I usually confirm whether my pay-slip deductions are per the signed loan	13.1	10.4	14.4	20.8	41.4	3.67	1.422
contract							
I am able to plan a regular borrowing schedule in line with my financial	16	15.1	22.4	20.8	25.7	3.25	1.408
goals							
I am able to implement a regular and predictable borrowing schedule	17.8	18.9	26.3	19.3	17.8	3.04	1.329
I honour my debt obligation as scheduled so as to avoid extra interest	7.2	5.9	11.9	21.5	53.6	4.10	1.213
charges, penalties and fees							
I keep emergency funds enough to cover three month's expenses	35.5	24.3	17.9	9.6	12.7	2.40	1.370
n = 581, Cronbach's alpha = 0.817; VLE=Very Low Extent, LE = Low Exter	ent, ME	=Mode	rate Ext	ent, HE =	= High Ex	tent, VHI	E= Very

Table 1: Responses on debt capability

HighExtent.

Descriptive Statistics on Debt capability and Indebtedness

Table 1 shows that respondents scored above average on all items except on the last statement; "I keep emergency funds enough to cover three month's expenses." The highly favoured practise is "payment of debt on time to avoid penalties and levies" (mean=4.10); similar to a study by Mbekomize and Mapharing (2015), which found the practice one of the highly scored (mean = 3.88 on six-likert scale). Majority of the respondents did not have adequate emergency funds. Funfgeld and Wang (2009) contends that respondents who score low on this factor - emergency funds - find it difficult to have some financial savings to cover unforeseen events; they are vulnerable to financial shocks. The aggregate debt capability has a mean of 3.14 (62.8%); which is satisfactory. A study by Lusardi and Tufano (2009) found Americans were financially incapable.

Format	Frequency	Percent
Written	125	21.5
Mental	130	22.4
Both written and mental	315	54.2
None of the above	11	1.9
Total	581	100

 Table 2: Responses on personal budgeting format

Review of Table 2 finds that less that quarter of the respondents (22 %) maintain a written budget, the rest maintain partially written budget or none at all. This Supports Ajzerle et al. (2013) and Krah, Aveh and Addo (2014) who found that majority of their respondents did not prepare personal budgets. A personal budget is an individual's plan expressed in financial term. It can be used to allocate future incomes towards expenses, savings and debt repayments within the budget constraints. Individuals will make borrowing and spending decisions by means of simple mental representations which cannot be called budget. This representations only fit the cognitive capacity of the budgeter (Schicks, 2012).

A study by Cynamom and Fazzari (2008) found that respondents do not have a borrowing plan; rather, they only mimic the behaviour they observe around them. Written goals have been shown to increase the ability to overcome impulsiveness (Winchester, 2011). A study by Ajzerle et al. (2013) found that the 97.1% highly

financially capable person had goals while 90.8 % of the low financially capable person had goals; of this, only 33.1 had written goals. Their study concluded that high debt capability leads to effective use of debt.

		DSR	DIR	ID
Written bu	dget	0.2945	7.1122	2.6705
Other budg	gets	0.3109	8.6066	3.4384
Mean		0.3074	8.2934	3.2765
ANOVA	F	0.819	4.345	3.071
	Sig.	0.366	0.038	0.080

Table 3: Mean indebtedness by personal budgeting format

Results in Table 3 show that respondents who write their budget have the least indebtedness by all the three dimensions. However, DSR and ID cannot be significantly (p-value > 0.05) explained by the budget format while DIR can. This is confirmed by Independent Sample Levene' Test of Equality of Means and Mann-Whitney U test. This supports Kamleitner, Hornung and Kirchler (2010) who contends that mental budgeting is related to indebtedness since it only conveys a false sense of control over spending. Therefore, individual operating unstructured, vague and mental budget can easily slip into debt.

	F	Sig.
Province	1.052	0.399
Sector	0.668	0.827
Occupation	1.428	0.123
Management level	1.633	0.056
Gender	0.562	0.912

Age	1.385	0.143
Marital status	0.980	0.477
Family size	1.510	0.091
Level of education	0.561	0.913
Work experience in years	1.714*	0.040
Housing type	0.633	0.858
Rural/urban	0.732	0.762
Level of income	0.904	0.756

*Significance level= 0.05

People are aware of the importance of financial practices such as written financial goals, formal budgets but very few practise them (Krah et al., 2014). ANOVA results in Table 4 found only years of work experience statistically significant (p-value = 0.040) with those with the longest tenure budgeting more and trailed by the least experienced. Pearson correlation confirmed the relationship between years of experience and personal budgeting as weak, positive and significant (R = 0.110, p-values = 0.009). This supports Locke and Latham (2013) who contend that the elderly persons will show higher goal commitment than medium aged and the young. The implications is debt budgeting improves with time. In the contrary, Finke (2011) contend that individuals spend a lifetime acquiring financial knowledge but financial capability which is the ability to apply financial knowledge declines with age as memory, and recalling ability fades; referred to as loss of fluid intelligence.

Table	5:	ANO	VA:	Personal	budgetary	control
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	F	Sig.
Province	1.570	0.083
Sector	1.093	0.361
Occupation	0.607	0.860
Management level	1.308	0.198

Gender	0.455	0.955
Age	1.461	0.121
Marital status	1.060	0.392
Family size	1.316	0.193
Level of education	0.834	0.632
Work experience in years	1.292	0.207
Housing type	0.691	0.784
Rural/urban	1.785*	0.038
Level of income	1.138	0.168

*Significance level= 0.05

ANOVA results in Table 5 found only location of work station (rural or urban) statistically significant (p-value = 0.038) with those with the urban areas practising personal budgetary control more.

Table	6: ANOV	A: Perso	nal planning	g and	goal setting
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	F	Sig.
Province	1.434	0.092
Sector	1.182	0.258
Occupation	0.867	0.639
Management level	1.197	0.244
Gender	0.994	0.470
Age	0.751	0.786
Marital status	0.856	0.654
Family size	1.444	0.087

Level of education	0.937	0.545
Work experience in years	0.701	0.840
Housing type	1.824*	0.013
Rural/urban	0.570	0.943
Level of Income	1.159	0.136

*Significance level= 0.05

ANOVA results in Table 6 only found a significantly (p-value = 0.013) relationship with housing category. The mortgagor had the highest personal planning and goal setting score. The mortgagors were also found to be the most indebted individuals while those living with parents had the least personal planning and goal setting score; perhaps this is because of the dependence syndrome. Kenya's dependence ratio for 2011 was 82.14%; it performed poorly when compared with other middle income countries. For example, the dependency ratio for Malaysia at the same time was 53% (KIPPRA, 2013).

	F	Sig.
Province	1.694*	.002
Sector	1.126	.259
Occupation	1.363*	0.050
Management level	1.048	0.388
Gender	0.907	0.664
Age	1.105	0.291
Marital status	0.490	0.999
Family size	0.927	0.624
Level of education	0.981	0.516

Table	7:	ANO	VA:	Aggregated	debt	capability
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Work experience in years	1.164	0.207
Housing type	1.394*	0.039
Rural/urban	0.963	0.553
Level of Income	1.656*	0.004

*Significance level = 0.05

Finally, ANOVA results in Table 7 found a significantly (p-value < 0.05) relationship with province, occupation, housing type and total income. Respondents from Nairobi province were found more debt capable followed by Coast and trailed by Central province. Respondents in the financial and professional services had the highest score in personal budgetary control. The mortgagor had the highest debt capability score while those housed by their employer had the least. Pearson correlation found a very weak but positive significant (R = 0.090, p-values = 0.040) relationship between aggregate debt capability and total income. The implication is debt capability improves as income increase. This is consistent with a study by Jang (2015) who found that income and financial management competency have moderate strong (0.440) and significant relationship.

Emergency f	und class	DSR	DIR	ID
Inadequate		0.3220	8.8069	3.6396
Adequate		0.2848	7.3922	2.6006
Mean		0.3073	8.2375	3.2508
ANOVA	F	5.964	5.601	8.912
	Sig	0.015	0.018	0.003

 Table 8: Indebtedness by size of emergency fund

Findings in Table 8 show that indebtedness can be explain significantly (p-value < 0.05) by size of emergency fund with respondents holding inadequate precautionary funds more indebted. This supports Finke (2011) who also found that respondents with inadequate emergency funds are financially vulnerable and hence prone to

indebtedness. Finocchiaro, Nilsson, Nyberg & Soultanaeva (2011) argues that people take more debt than is rational because they are debt illiterate. They continue to argue that people may also hold insufficient precautionary saving or too much debt because they are over-confident and therefore underestimate the "variance of future shocks".

	1	2	3	4	5	6	7
PB	1						
PBC	.528 ^{**} .000	1					
PPG	.456 ^{**} .000	.523 ^{**} .000	1				
DC	.793 ^{**} .000	.824 ^{**} .000	.828 ^{**} .000	1			
ID	041 .375	152 ^{**} .001	084 .065	120 ^{**} .008	1		
DSR	021 .638	175 ^{**} .000	067 .131	112 [*] .012	.788 ^{**} .000	1	
DIR	037	138**	051 267	096 [*]	.911**	.627**	1

Table 9: Correlation Matrix

PB= personal budgeting, PBC= personal budgetary control, PPGS= personal planning and goal setting, DC = aggregated debt capability

Results in Table 9 show that there was a negative correlation between DIR, ID and individual debt capability indicators and the aggregated debt capability and whereas a positive correlation was found between ID, DSR and DIR on one hand and individual debt capability indicators and the aggregated debt capability on the other. The strongest positive correlation was between ID and DIR (0.911) whereas the weakest correlation of 0.021 was found between personal budgeting and DSR. Most of the correlations were significant except between both personal budgeting and personal planning and goal setting and all dimensions of indebtedness. The correlation coefficients between independent variables were less than 0.9. Therefore, no variable was excluded because of multicollinearity. Further, Kaiser-Meyer-Olkin measure of sampling adequacy was 0.500 indebtedness and debt capability. Bartlett's Test of Sphericity for indebtedness and debt capability was significant (p-values = 0.007, χ =7.398). The importance of each variable in the models was checked by looking at the communalities. No variable had communalities of less than 0.5 to warrant removal.

The eigen values was set to include values 0.01 so that it could capture all values of DSR.

Correlation Between Debt Capability and Indebtedness

Analyzing Table 9 shows that there is a weak negative correlation (R = -0.120, p-value = 0.008) between debt capability and ID while Table 10 indicated that borrowing behaviours explains 1.4% of the variation in ID. It follows that other factors outside debt capability explain 98.6 % of variation in ID. This is consistent with Jang (2015) who found that financial management competency reduces financial distress significantly.

Table 10: Regression results of debt capability and indebtedness

Model	Sum of squares	df	Mean square	F	Sig.
Regression	107.566	1	107.566	7.017	0.008
Residual	7342.557	479	15.329		
Total	7450.123	480			
$R = 0.120, R^2$	$\Delta^2 = 0.014, \Delta R^2 = 0$.012			

The model to be tested was

 $Y = \beta_0 + \beta_1 X_1 + \varepsilon_i$Equation(4.7) Where:

Where:

Y= ID β_0 = level of ID the in absence of debt capability β_1 = intercept for the independent variable X₁ = debt capability ε_i = error term

The model was found to be valid (F(1, 479) = 7.017, p-value = 0.008). Details of the model are found in Table 11. The fitted model equation using the unstandardised coefficients is $Y = 4.972 - 0.57X_1$ while the fitted model using the standardised coefficients is $Y = -0.12X_1$.

	Unstandardized	Standard	Standard	Standardized		
Model	Beta(β)	error	Beta(β)	t	Sig.	VIF
Constant	4.972	0.702		7.086	0.000	
Debt	- 0.570	0.215	- 0.120	- 2.649	0.008	1.000
capability						

Table 11: Regression coefficients of debt capability and indebtedness

Correlation between debt capability and Debt Service Ratio

Analyzing Table 9 shows that there is a weak negative correlation (R = -0.112 p-value = 0.012) between debt capability and DSR while Table 12 indicated that borrowing behaviours explains 1.2% of the variation in DSR. It follows that other factors outside debt capability explain 98.8 % of variation in DSR

Model	Sum of squares	df	Mean square	F	Sig.
Regression	0.181	1	0.181	6.287	0.012
Residual	14.316	498	0.029		
Total	14.497	499			
$R = 0.112, R^2$	$\Delta R^2 = 0.012, \ \Delta R^2 = 0.012$	010			

Table 12: Regression results of debt capability and debt service ratio

The model to be tested was

 $Y_{i} = \beta_{0} + \beta_{1}X_{1} + \varepsilon_{i} \dots \text{Equation}(4.8)$ Where: $Y_{1} = \text{debt service ratio (DSR)}$ $\beta_{0} = \text{level of DSR in the absence of debt capability}$ $\beta_{1} = \text{intercept for the independent variable}$ $X_{1} = \text{debt capability}$ $\varepsilon_{i} = \text{error term}$ The model was found to be valid (F(1,499) = 6.287, p-value = 0.012). Details of the model are found in Table 13. The fitted model equation using the unstandardised coefficients is $Y_1 = 0.374 - 0.023X_1$ while the fitted model using the standardised coefficients is $Y_1 = -0.112X_1$.

	Unstandardized	Standard	Standardized			
Model	Beta (β)	error	Beta (β)	t	Sig.	VIF
Constant	0.374	0.030		12.657	0.000	
Debt	- 0.023	0.009	- 0.112	-2.507	0.012	1.000
capability	y					

Table 13: Regression coefficients of debt capability and debt service ratio

Correlation Between Debt Capability and Debt Income Ratio

Analyzing Table 9 shows that there is a weak negative correlation (R = -0.096, p-value = 0.035) between debt capability and DIR while Table 14 indicated that debt capability explains 0.9% of the variation in DIR. It follows that other factors outside debt capability explain 99.1 % of variation in DIR

Table 14: Regression results of debt capability and debt income ratio

Model	Sum of squares	Df	Mean square	F	Sig.		
Regression	188.673	1	188.673	4.474	0.035		
Residual	20285.980	481	42.175				
Total	20474.653	482					
R= 0.096, R ² = 0.009, $\Delta R^2 = 0.007$							

The model to be tested was

 $Y_2 = \beta_0 + \beta_1 X_1 + \varepsilon_i$Equation (4.9) Where: Y_2 = debt service ratio (DIR) β_0 = level of DIR in the absence of debt capability β_1 = intercept for debt capability X₁=debt capability ε_i = error term

The model was found to be valid (F (1,481) = 4.474, p-value = 0.035). Details of the model are found in Table 15. The fitted model equation using the unstandardised coefficients is $Y_2 = 10.434 - 0.752X_1$ while the fitted model using the standardised coefficients is $Y_2 = -0.096X_1$.

Table	15:]	Regression	coefficients	of	debt	capability	and	debt	income	ratio
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	Unstandardized	Standard	Standardize	ed		
Model	Beta(β)	error	Beta(β)	t	Sig.	VIF
Constant	10.434	1.160		8.998	0.000	
Debt	- 0.752	0.356	- 0.096	-2.115	0.035	1.000
capability	ý					

7. CONCLUSION

Debt capability significantly explains 1.4 % of variation in indebtedness (Table 10). Debt capability and ID have a weak and negatively ($\beta_3 = -0.120$) correlation meaning debt level reduces by 0.12 when debt capability improves by a unit. Debt capability can explain merely 1.2 % and 0.9 % of DSR and DIR respectively as indicated in Tables 12 and 14. Therefore, hypothesis that there is no significant relationship between debt capability and indebtedness was rejected and concluded that debt capability has a significant effect on indebtedness.

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