IOSR Journal of Economics and Finance (IOSR-JEF)
e-ISSN: 2321-5933, p-ISSN: 2321-5925.Volume 7, Issue 6 Ver. I (Nov. - Dec. 2016), PP 16-22
www.iosrjournals.org

The Relationship between Borrowing Behaviours and Indebtedness of Employees in the Formal Sector in Kenya

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Abstract: *This study examined the relationship between borrowing behaviours 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 borrowing behaviours and indebtedness. The findings reveal that borrowing behaviours have a significant effect on indebtedness.*

Keyword: *Borrowing behaviours, Debt service Ratio, Debt income ratio, Formal Sector, Indebtedness*

I. Introduction

A lot of research have been done on behaviour of stock investors in stock exchanges. However, only few studies have addressed behaviours of individuals especially when they take on debt and spend it. 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 [1]. In other cases, personal debt is packaged as a product such as car loan, housing loan, education loan, bank loan, bank overdraft, micro-credit, medical loan and mortgage loan. When individuals take debt of whatever nature, they become indebted to the lender or supplier.

In most cases, personal debt decisions entail altitudinal and psychological traits. This includes motivation to seeking financial information, ability to control emotions that affect decision-making and assurance in decision-making and financial management capacities[2]. Often, some borrowing behaviours are irrational, illogical and incorrect and an indication of poor debt capability. Empirical review provides examples of such financial behaviours as self-control or impulsiveness[3], over-confidence [4,5] and peer influence or herding [6,7]. According to [8] formal sector refers to the part 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.

Objective

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

Hypothesis

There is no significant relationship between borrowing behaviours and indebtedness of formal sector employees in Kenya.

II. Methodology

The study was conducted between March and May 2016. The data was collected via self-administered questionnaire from a sample of 1,000 working Kenyans.residents. 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. Borrowing behaviours was operationalised by likert type question on self-control, over-confidence and peer influence. Respondents were requested to rank the extent to which they agreed with the statements in Table 1 on a scale of 1 to 5. Arithmetic mean was used to arrive at aggregate borrowing behaviours.

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 (ID) 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, correlational 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 [9]. To arrive at the final respondents a three stage sampling was done, First the entire population was clustered into 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; descriptive statistics, Pearson's correration, ANOVA and OLS regression were used

III. 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. Self-control, over-confidence and peer influence likert questions had Cronbach's alpha of 0.814 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 [10]. Eight question were used since two were deleted so the Cronbach'salpha could be above 0.7.

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 sampled the same number of respondents. For example, [11] using structured questionnaire; 516 respondents were realized. Another related study by [12] which measured the over-indebtedness of micro-borrowers in Ghana conducted an in-depth survey of 531 micro debtors. Yet another study by [13] determined the relationship between financial behaviour and financial position of urban households in Malaysia used 916 questionnaires. While [14] in their study on mortgage risks, debt literacy and financial advice finally settled on sample of 459 households.

Table 1: Responses on borrowing behaviours

Item	VLE %	LE %	ME %	GE %	VHE %	Mean	Std. Dev
*I am impulsive in the manner in which i borrow and spend the loans	54.5	11.0	17.4	6.8	10.2	2.07	1.382
I sometimes borrow to balance my personal budget (expenses and incomes)	53.2	11.5	17.7	10.0	7.7	2.07	1.340
I compare loan products among different lenders before final decision to borrow.	19.9	7.2	16.8	17	39.1	3.48	1.540
I have obtained salary advances to bridge my financial deficit	61.4	9.9	10.6	6.9	11.2	1.97	1.416
*When faced with a financial challenge, I have a hard time figuring out a solution	39.8	13.3	17.2	8.6	21.2	2.58	1.576
My ability to manage my loan finances is excellent	14.7	14.4	30.6	19.8	20.5	3.17	1.314
Whenever I make debt plans, they work as planned	12.3	15.3	34.6	18.2	19.7	3.18	1.259
I observe and discuss debt matters with peers before deciding to borrow	62.3	15.4	11.6	5.5	5.2	1.76	1.172
I select loan products recommended by friends and workmates	59.3	18.7	13.4	4.0	4.6	1.76	1.116
I have borrowed to acquire assets recommended or commonly owned by my friends and workmates	61.2	13.6	12.0	5.8	7.4	1.85	1.269

N=581, Cronbach's alpha= 0.814; VVE=Very Low Extent, LE = Low Extent, ME =Moderate Extent, HE =

N=581, Cronbach's alpha= 0.814; VVE=Very Low Extent, LE = Low Extent, ME =Moderate Extent, HE = High Extent, VHE= Very High Extent, Deleted*

The first four statements measured self-control, the next three measured over-confidence while the last three measured peer influence. Low self-control, over-confidence and high peer influence while making debt decision is associated with debt illiteracy. Therefore, statements measuring these borrowing behaviours were re-coded; where the likert scale 1 was coded as 5, 2 as 4, 4 as 2 and 5 as 1. This is because respondents who rated themselves as having "low extent" on the likert scale statement were deemed to be debt literate. However, responses on the statement, "When faced with a financial challenge, I have a hard time figuring out a solution." was not re-coded since over-confidence is already alluded.

5.1 Self-control

The finding in Table 1 indicate that the respondents have high self-control (Mean = 4.03); 55 % of the respondents reported that they were not impulsive compared with 48 % in a study by [3]. Yet 10.2 % of the respondents agreed they were impulsive compared with 9.2% in the study by [3].

Table 2:ANOVA: Self-control

		Sum of Squares	Df	Mean Square	F	Sig.
DSR	Between Groups	0.693	8	0.087	3.091	0.002
	Within Groups	10.897	389	0.028		
	Total	11.590	397			
DIR	Between Groups	451.157	8	56.395	1.377	0.205
	Within Groups	15158.021	370	40.968		
	Total	15609.178	378			
ID	Between Groups	359.544	8	44.943	3.105	0.002
	Within Groups	5326.401	368	14.474		
	Total	5685.945	376			

High self-control refers to rational borrowing behaviour, which utilises fully the cognitive ability of an individual. Such persons are less likely to prefer instant gratification to long-term goals. While low self-control has a positive relationship with indebtedness due to myopia and framing biases [15]. Consistent with [15], results in Table 2 show dependence between self-control and DSR and ID were significant (p-value < 0.05). Yet another study by [13] found, using Pearson correlation (R = 0.237), that household's financial position was dependent on its locus of control among other factors. Locus of control represents the degree of control the household has on financial matter. [3] also found that self-control problems are positively related with indebtedness, but unfortunately, individuals cannot be educated on it.

5.2 Over-confidence

Reviewing Table 1, majority of the respondents have moderate confidence (Mean = 2.68).

Table 3:ANOVA: Over-confidence

		Sum of Squares	Df	Mean Square	F	Sig.
DSR	Between Groups	.554	12	.046	1.647	.075
	Within Groups	14.372	513	.028		
	Total	14.926	525			
DIR	Between Groups	463.530	12	38.628	.902	.545
	Within Groups	21114.338	493	42.828		
	Total	21577.868	505			
ID	Between Groups	336.295	12	28.025	1.800	.045
	Within Groups	7628.134	490	15.568		
	Total	7964.429	502			

Reviewing Table 1, majority of the respondents have moderate confidence (Mean = 2.68). Results in Table 3 show the relationship between over-confidence and ID was significant (p-value < 0.045) but not with DSR and DIR. Over-confidence in debt decisions bars full utilisation of the acquired debt knowledge due to the illusion of control, payment bias and status quo bias. To make the matter worse, respondents who are over-confident are less likely to consider themself impulsive. It also blocks avenues to widening their knowledge by, for instance, seeking debt advice [16].

5.3 Peer influence

Reviewing finding in Table 1 show that a good majority of the respondents (over 59 %) took the very low extent for the three items on peer effects (mean = 4.22). This means majority of the respondents have low peer influence when making debt decisions and hence are debt literate. Theoretically, individual will prefer behaviour of their reference group to outsiders, a phenomenon called in-group bias. In-group bias is due to peer pressure. Peer influence emanated from unconscious external influence, which affects the quality of decisions

made. Often, peer influence in personal finances affects spending decision due to social comparison (Finke, 2011). Hence, in line with the relative income hypothesis; a lower income earner becomes tempted to take up debt to compete with a higher income earner.

Table 4: ANOVA: Peer influence

		Sum of Squares	Df	Mean Square	F	Sig.
DSR	Between Groups	.482	13	.037	1.311	.202
	Within Groups	13.600	481	.028		
	Total	14.082	494			
DIR	Between Groups	775.932	13	59.687	1.449	.133
	Within Groups	18989.725	461	41.192		
	Total	19765.657	474			
ID	Between Groups	301.500	13	23.192	1.514	.109
	Within Groups	7017.806	458	15.323		
	Total	7319.306	471			

ANOVA results in Table 4 show the relationship between peer influence and ID and its dimension was insignificant (p-value > 0.05).

Table 5: ANOVA: Borrowing behaviour

	Self-control		Over-confidence		Peer influence		Aggregated Borrowing behaviours	
	F	Sig.	F	Sig	F	Sig.	F	Sig.
Province	.466	.880	5.128	.000	2.467	.003	1.591	.004
Sector	1.345	.219	1.430	.148	.679	.784	.995	.492
Occupation	2.466	.013	1.098	.359	.341	.985	.918	.657
Management level	.975	.455	.349	.979	.406	.968	.988	.506
Gender	1.765	.082	1.408	.157	1.220	.261	1.230	.117
Age	2.527	.011	1.137	.327	.503	.923	1.304	.065
Marital status	.770	.630	1.460	.135	.615	.843	.923	.647
Family size	1.140	.335	.927	.519	.543	.897	1.166	.188
level of education	2.479	.012	1.710	.061	2.034	.017	.577	.996
Work experience in years	1.349	.217	1.579	.093	.498	.926	1.063	.354
housing type	1.742	.087	.777	.075	.925	.526	1.005	471
rural/urban	.674	.717	2.112	.015	1.656	.067	1.446	.017
Level of income	1.055	.394	1.277	.228	1.021	.430	.824	.832

ANOVA results in Table 5 revealed that occupation, age and education predicted significantly (p-values < 0.05) the self-control level of the respondents. The trend for self-control using age followed a "u" shape, with the middle aged having the least mean (3.98). Also, those with higher education were found to have high self-control. Lastly, those in financial and professional services had the highest mean (4.25) of self-control. This is perhaps because of cumulative exposure with financial matters. Inconsistent with prior studies, ANOVA results significantly (p-values < 0.05) associated over-confidence with province and urban/rural; all other socio-economic characteristics were insignificant. For example, men generally are over-confident than women [18,2]. [17] found the young have high financial knowledge but lower financial confidence and the more schooled had greater confidence. This means confidence is directly related to experience with debt environment, practical or otherwise. Also, these results are inconsistent with a study by [19] who found that confidence declines with age. ANOVA results in Table 5 show a significant (p-value < 0.05) difference in over-confidence among rural/urban respondents . The means for the urban and rural respondents were 2.65 and 2.68 respectively. In addition, it is not clear why respondents in Central province were over-confident (mean =2.88). Over-confidence usually blur debt literacy and is only positively associated with over-indebtedness because such respondents are likely to act on subjective probability in the debt market.

ANOVA results show a significant (p-value < 0.05) difference between peer effect province, and also with education level of the respondents. Pearson correlation results show that there is significant negative relationship between peer influence and education levels (p-value = 0.000) with the low educated having higher peer influence. However, the ANOVA results on the relationship between peer effects and indebtedness and its dimensions were statistically insignificant (p-value > 0.05). This is inconsistent with [20] who found a positive association between peer effects and indebtedness. This surprisingly goes against the current trend of peer to peer lending platforms, popularly known as *"chamas".* In addition, it is not clear why respondents in Central province have the best peer influence (mean = 4.34).

Table 6: Correlation Matrix

		1	2	3	4	DSR	DIR	ID
Self control	Pearson Correlation	1						
	Sig. (2-tailed)							
Overconfidence	Pearson Correlation	-.097*	1					
	Sig. (2-tailed)	.041						
Peer influence	Pearson Correlation	.161**	.132**	1				
	Sig. (2-tailed)	.001	.002					
Borrowing behaviours	Pearson Correlation	.796**	-.052	.416**	1			
	Sig. (2-tailed)	.000	.229	.000				
DSR	Pearson Correlation	-.204**	.061	-.058	-.137**	1		
	Sig. (2-tailed)	.000	.160	.200	.004			
DIR	Pearson Correlation	-.151**	.041	-.041	-.141**	.627**	1	
	Sig. (2-tailed)	.003	.356	.367	.003	.000		
ID	Pearson Correlation	-.216**	.060	-.058	-.169**	.788**	.911**	1
	Sig. (2-tailed)	.000	.181	.209	.000	.000	.000	
*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).								

Results in Table 6 shows that there was a weak negative correlation between DSR, DIR, ID and self-control, peer influence and aggregate borrowing behaviours while there is a weak positive correlation between DSR, DIR, ID and over-confidence. The strongest positive correlation was between ID and DIR (0.911) whereas the weakest correlation of 0.041was found between over-confidence and DIR. The correlations between overconfidence and peer influence on one hand, and ID, DSR and DIR on the other were insignificant while those among self-control and aggregate borrowing behaviours on one hand and ID, DSR and DIR on the other are significant. The correlation coefficients among borrowing behaviour and its indicators were less than 0.9. Therefore, there was no problem of multicollinearity. Further, Kaiser-Meyer-Olkin measure of sampling adequacy for aggregate borrowing behaviours ID, DSR and DIR was 0.594. Bartlett's Test of Sphericity for aggregate borrowing behaviours ID, DSR and DIR were significant (p-values = 0.000, χ =1335.389). 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.

5.4 Correlation between borrowing behaviours and indebtedness

Analyzing Table 6 shows that there is a weak negative correlation (R = - 0.169, p -value = 0.000) between borrowing behaviours and ID while Table 7 indicated that borrowing behaviours explains 2.9 % of the variation in ID. It follows that other factors outside debt experiences explain 97.1 % of variation in ID.

Table 7: Regression results of borrowing behaviours and Indebtedness

Model	Sum of squares	df	Mean square	F	Sig.
Regression	211.834	1	211.834	13.850	0.000
Residual	7204.112	471	15.295		
Total	7415.946	472			
$R = 0.169$, $R^2 = 0.029$, $\Delta R^2 = 0.027$					

The model to be tested was

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon_i \quad \text{.....Equation (1)}$$

Where:

Y = indebtedness (ID)

β_0 = level of ID in the absence of borrowing behaviours

β_1 = intercept for the independent variable

X_1 = borrowing behaviours

ε_i = error term

The model was found to be valid (F(1,471) = 13.850, p-value = 0.000). Details of the model are found in Table 8. The fitted model equation using the unstandardised coefficients is $Y = 6.724 - 0.964X_1$ while the fitted model using the standardised coefficients is $Y = - 0.169X_1$.

Table 8: Regression coefficients of borrowing behaviours and indebtedness

Model	Unstandardized Beta( )	Standard error	Standardized Beta( )	t	Sig.	VIF
Constant	6.724	0.961		7.001	0.000	
Borrowing behaviours	- 0.964	0.259	- 0.169	- 3.721	0.000	1.000

5.5 Correlation between borrowing behaviours and debt service ratio

Analyzing Table 6 shows that there is a weak negative correlation (R = - 0.137, p -value = 0.004) between borrowing behaviours and DSR while Table 9 indicated that borrowing behaviours explains 1.9 % of the variation in DSR. It follows that other factors outside debt experiences explain 98.1 % of variation in DSR

Table 9: Regression results of borrowing behaviours and debt service ratio

Model	Sum of squares	Df	Mean square	F	Sig.
Regression	0.269	1	0.269	9.289	0.002
Residual	14.173	489	0.029		
Total	14.442	490			
$R = 0.137,\ R^2 = 0.019,\ \Delta R^2 = 0.017$					

The model to be tested was

$Y_1 = \beta_0 + \beta_1 X_1 + \varepsilon_i$ .....Equation (2)

Where:

Y= debt service ratio (DSR)

β_0 = level of DSR in the absence of borrowing behaviours

β_2 = intercept for the independent variable

X_2=borrowing behaviours

ε_i = error term

The model was found to be valid (F(1,489) = 9.289, p-value = 0.002). Details of the model are found in Table 10. The fitted model equation using the unstandardised coefficients is $Y_1 = 0.430 - 0.034X_1$ while the fitted model using the standardised coefficients is $Y_1 = - 0.137X_1$.

Table 10: Regression coefficients of borrowing behaviours and debt service ratio

Model	Unstandardized Beta( )	Standard error	Standardized Beta( )	t	Sig.	VIF
Constant	430	0.041		10.390	0.000	
Borrowing behaviours	.034	0.011	- 0.137	-3.048	0.002	1.000

5.6 Correlation between borrowing behaviours and debt income ratio

Analyzing Table 6 shows that there is a weak negative correlation (R = - 0.141, p-value = 0.003) between borrowing behaviours and D1R while Table 11 indicated that borrowing behaviours explains 2 % of the variation in DIR. It follows that other factors outside debt experiences explain 98 % of variation in D1R

Table 11: Regression results of borrowing behaviours and debt income ratio

Model	Sum of squares	Df	Mean square	F	Sig.
Regression	400.049	1	400.049	9.525	0.002
Residual	19865.369	473	41.999		
Total	20265.419	474			
$R = 0.141,\ R^2 = 0.020\ \Delta R^2 = 0.018$					

The model to be tested was

$Y_2 = \beta_0 + \beta_1 X_1 + \varepsilon_i$ .....Equation (3)

Where:

Y_2= debt service ratio (DIR)

β_0 = level of DIR the in absence of borrowing behaviours

β_1 = intercept for the independent variable

X_1 =borrowing behaviours

ε_i =error term

The model was found to be invalid (F(1, 473) = 9.525, p-value = 0.002). Details of the model are found in Table 12. The fitted model equation using the unstandardised coefficients is $Y_2 = 12.902 - 1.318X_1$ while the fitted model using the standardised coefficients is $Y_2 = - 0.141X_2$.

Table 12: Regression coefficients of borrowing behaviours and debt income ratio

Model	Unstandardized Beta(□)	Standard error	Standardized Beta(□)	t	Sig.	VIF
Constant	12.902	1.585		8.141	0.000	
Borrowing behaviours	-1.318	0.427	-0.141	-3.086	0.002	1.000

IV. Conclusion

The findings reveal that borrowing behaviours significantly explains 2.9 % of the variation in indebtedness (Table 7). Borrowing behaviours and ID have weak and negative ($\beta_2 = - 0.169$) correlation meaning as borrowing behaviours improve by a unit debt level decline by 0.169. However, borrowing behaviours only explained 1.9 % and 2.0 % of DSR and DIR respectively as indicated in Tables 9 and 11. Therefore, hypothesis that there is no significant relationship between borrowing behaviours and indebtedness was rejected and concluded that borrowing behaviours has a significant effect on indebtedness, albeit minimal.

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