An Empirical Analysis of Household Debt Behavior Determinants

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Abstract

This study identifies the determinants of debt behaviors and their effects on household consumption. We surveyed households in Riau, particularly in Pekanbaru and its neighboring areas, using purposive sampling and collected 390 useable responses. Our findings show that of the ten determinants considered, debt behavior can be explained by five determinants: (i) imitated lifestyle and consumerism, (ii) ability to manage money from debt, (iii) effects of promotion on the internet and visual media, (iv) monthly income, and (v) increasing household expenses and dependants. Implications of the findings are discussed.

Keywords: consumerism; income pressure; dissaving

JEL classifications: D1; D31; E21; G01

1. Introduction

Household debt behaviors have attracted academic attention for several decades. Since 3200 BC, scholars have considered debt as a means for meeting daily household needs, such as home loans, home renovations, basic necessities, old age savings, valuables, vehicles, education, health, marriage, credit cards, household appliances, social activities, travel, social gathering, pleasure, and entertainment. Problems arise when monthly income runs out within 15 or 20 days, forcing households to struggle to survive the rest of the month. On the other hand, households cannot avoid the modern demand for consumerism, urging households to spend more than they receive. This is the reality experienced by middle-income, lower-income as well as high-income households.

Debt has experienced an increasing trend in the last three decades and constituted an effort by households to maintain their relative standard of consumption in the face of changes in income distribution, especially for middle- and lower-income households (Worthington 2006; Cosma & Pattarin 2011). Insufficient monthly income encourages households to use any source of debt supply to meet their needs. Thus, changes in household consumption practices are undeniable and marked by and correlated with development and social status (Carradore 2012). On the other hand, household economic situation indirectly affects consumption through aspiration level and social comparison (Karlsson et al. 2004) where households imitate behaviors around them, both from real people and media images, or act as if they are other people in their social reference groups (Cynamon & Fazzari 2008). Changes in behavior through social relations significantly encourage households to increase spending, eventually resulting in financial difficulties whose closest solution is debt.

Studies discussing the determinants of household debt are relatively scarce compared to those on public debt and corporate debt. Moreover, only a

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few studies on household debt behavior focus on credit card usage and even more so on students. In this regard, household consumption expenditure may affect a country's economic order (Zinman 2015). Questions have been raised concerning the causes and determinants of debt behavior in households, many of which have been addressed in several empirical studies. According to Zinman (2015), the determinants of debt behavior include small income, income inequality, technological developments in loan production, and door-to-door debt offer. Legge & Heynes (2009) conclude that the determinants of household debt behavior comprise modern phenomena, deregulation and banking expansion, changes in economic conditions, as well as social status and environment in the society. Meanwhile, Lewis (2007) reports that the determinants of debt behavior include low loan interest rates, the ability and confidence to repay debt, and credit offers through letters, e-mails, and TV advertisements. Furthermore, debt behavior occurs because of materialism, single-parent conditions, the belief that debt can buy happiness, greater spending than income, higher living standards, social recognition, imitation of upper-class lifestyle, and lower availability of financial resources (Georgarakos, Haliassos, & Pasini 2012; Barba & Pivetti 2009; McCloud 2010). Determinants of debt behavior may change over time, influenced by technological and information development.

The determinants of debt behavior are divided into two categories: (i) internal determinants, such as factors of income and inequality as well as attitudinal changes (e.g. viewing debt as a taboo or as a friend who can help in any financial difficulty), and (ii) external determinants, such as various conveniences that loans provide and pressure or coercion to use debt. Households might be trapped in debt due to borrowing from usurers or excessive use of credit cards or online loan services (financial technology) because of their negligence regarding

future consequences.

Conclusively, debt behavior in households has two consequences. Well-managed debt will generate positive effects on households (Straus 2015), such as driving home life towards the desired progress and welfare (Lewis 2007), maintaining and improving household's lifestyle (Johnson & Li 2007), providing a substitute for wages (Barba & Pivetti 2009), predicting household consumption behavior (Baker 2014), increasing household consumption and contribution towards economic growth in the short term (Mutezo 2014), and transfering resources from the future to the present to increase consumption. Poorly managed debt, mostly due to uncontrolled consumption (Mutezo 2014), will generate negative effects on households, such as increasing households' vulnerability to conflicts over debt repayment (Reiakvam & Solheim 2013), reducing future spending and decelerating households' economic growth in the long run (Johnson & Li 2007), creating significant barrier to economic recovery (Gärtner 2013), reducing household consumption level in the long run (Baker 2014), and reducing household savings in the aggregate. Thus, debt is viewed negatively in relation to long-term consumption growth (Ekici & Dunn 2010). In addition, debt causes economic impacts such as poverty, psychological impacts such as chronic stress, social impacts such as social exclusion, and even criminal effects such as the tendency to harm or take the lives of others (Dunn & Mirzaie 2016; Hoeve et al. 2014).

This study on household debt behavior is justified by the following reasons: (i) debt behavior has become a trend in modern household life, hence worth studying; and (ii) consumptive debt often constitutes the frequently-offered loan type, allowing debt to be an option to meet all or part of the arising needs in household life. Changes in lifestyle, technological development, and social status have contributed to a shift in the determinants of household debt behavior over the time. Debt is caused by different factors,

not just small income, in different points of time.

This study follows a survey research design and aims to more deeply explore the determinants of household debt in the current conditions and predict the implications of debt behavior on household consumption and related loan-providing institutions. We tested the determinants of debt behavior to obtain a real description in households. Although several empirical studies have identified the determinants of debt behavior, societal changes have influenced the emergence of new determinants of household debt behavior. This study therefore offers a composition of more complex determinants of debt behavior in an analysis model integrated with household debt behavior. The following questions are considered: (i) are there new determinants arising in household debt behavior?; and (ii) which determinant influences current household debt behavior the most?

This paper is organized into the following sections: (i) introduction of the problem and the importance of the study; (ii) literature review which summarizes previous studies on the concept of debt behavior; (iii) research methods which describe the methods used and the research process carried out; (iv) findings and discussion; and (v) conclusion, limitation of the study, research implications, and references.

2. Literature Review

2.1. Basic Concepts of Debt

2.1.1. The Determinants of Household Debt Behavior

Referring to the Relative Income Hypothesis (RIH) introduced by James Duessenberry: (i) income (salary/wage) has a dominant effect on household consumption, (ii) there are psychological aspects in households facing changes in income, and (iii) behavior in the patterns of household consumption will

also depend on the behavior of their environmental consumption (Debelle 2004).

The theoretical assumptions are developed as follows. In terms of income, households may face budget constraints due to insufficient income to meet their needs within a certain period, arising urges and pressures to meet household needs, and an expenditure that is greater than income. From psychological perspective, there might be a change in the attitudes and perspectives of households towards debt from rejecting debt into accepting it. In terms of social environment, pressures from the closest people, social environment, and media consumption also influence changes in household consumption behavior from debt refusal into debt acceptance (Mayasari & Chrisharyanto 2018).

Economic theories explain that a person will always make logical decisions based on available information. This however is not always the case because many "unconscious" factors affect one's behaviors and hinder rational decisionmaking. Even though people do not always make rational choices, their choices can be predicted by studying their behaviors (Lewis 2007). In the case that, in addition to income, savings owned by households that are sufficient to cover consumption will allow for stable and smooth consumption. However, this situation does not apply to all households, leading to some households using debt to facilitate consumption for various reasons.

Studies by Worthington (2006), Barba & Pivetti (2009), and Brown et al. (2013b), find that the increase in household debt occurs in response to low salaries and wages or the increase in income that is not proportional to changes and price dynamics in the market. Barba & Pivetti (2009) and Berisha & Meszaros (2018) explain that household debt increases as a result of continuous changes in income distribution and inequality of income growth. Furthermore, low wages urge households to coexist

with relatively high levels of debt, thus providing a contradiction between the needs of consumption and distribution that continues to limit real income for most households.

Furthermore, Kumar & Mukhopadhyay (2013) and Mehrotra & Yetman (2015) conclude that debt may occur because households face an emergency, causing households to easily accept debt even though they have to bear the consequences. This includes debt with high interest obtained from usurers. Reiakvam & Solheim (2013) and Dunn & Mirzaie (2016) hold that household debt forms along with the development of households, number of children, changes in members' education, and other difficulties. Cynamon & Fazzari (2008) argue that households may imitate their surrounding behaviors and get motivated by those closest to them such as a spouse, parents, friends, relatives, or neighbors. Georgarakos, Haliassos, & Pasini (2012) support previous studies that find a significant effect on increasing household debt posed by social environment, neighbors, friends, and parents.

Mian & Sufi (2011), Cynamon & Fazzari (2008), and Shahrabani (2012) argue that motivation and personal ability are significantly correlated with debt. This is supported by Brown et al. (2013a) who conclude that households borrow money because they have the ability to control loans, both for consumption and investment purposes, aiming at meeting various social developments regarding consumption and financial behaviors. As reported by Reiakvam & Solheim (2013), Baker (2014), Hoeve et al. (2014), and Mutezo (2014), most households have debts, assuming constraints and barriers in small loans and household debt increase might be caused by the convenience provided by banks and nonbank institutions. Another study by Cynamon & Fazzari (2008) concludes that financial innovation and greater access to debt lead to budget constraints faced by households over the time, allowing a smooth run in their consumption.

Furthermore, according to Jacobsen & Naug (2004), households may accumulate debt by increasing loans to finance their consumption and investment by placing their residence as a collateral. However, lending to households is not always in accordance with the wishes of the households because there will always be adjustments to the debt requirements specified by the lenders. The reality experienced by households in the lending and borrowing relationships is addressed by Tomaszewicz (2014) who finds that debt accumulated by households from a financial institution leads to lending limitation due to the concerns about bad credits.

Studies conducted by Alam et al. (2014) and Mayasari & Chrisharyanto (2018) find that household consumption is also related to the use of information technology. Due to extensive availability of the internet, people have increasingly engaged in online consumption practices (collaborative consumption). Technological development has facilitated rapid exchange of information, product marketing through online (social) media, easier exposure to developments in other parts of the world, friendship groups, socialite groups, social status, and imitation of modern lifestyles, encouraging households to accumulate debt. These results are echoed by Mary M. (2012) who concludes that households accumulate debt to maintain and improve the same lifestyle that other people show.

2.1.2. Household Consumption

Consumption is household expenditure on goods and services such as clothing, food, entertainment, health services, and acquisition of assets. Consumption expenditure is determined by numerous factors in addition to income (Mary M. 2012). Household consumption is supported by income received in a certain period. Income can be classified into permanent income, which is received regularly in the long term and includes salary and

wages, and non-permanent income (transitory income) received on a limited or incidental basis such as bonuses, fees, incentives, inheritance, gifts, scholarships, and debt.

According to Barba & Pivetti (2009), an increase in household debt is largely due to the aspiration for higher living standards and social recognition, imitation of upscale lifestyle, and pressures to have consumer credit. The increasing adoption of consumer credit applies not only to people with fixed real income but also to those whose real wages and salaries did not increase in the last three decades.

Ekici & Dunn (2010) explain the relationship between debt growth and service and food consumption. Interestingly, excessive consumption tends to be discovered in non-food items. Such behavior is related to the tendency of several households with subaverage income to consume a greater share of income in order to compete with their peers (Georgarakos, Haliassos, & Pasini 2012).

2.2. Hypothesis Development

Based on existing studies on household debt behavior, we summarize the determinants of household debt behavior are presented in Table 1.

2.3. Pre-Study

We conducted the study in two stages. First, we used a sample of 100 respondents (not included in the samples used in the second part of the study) to test the validity and reliability of the data to be used in the second stage. In the second stage, we used a sample of 390 respondents; thus, in total 490 respondents were taken as sample. The survey was conducted in Riau from November 2017 until early February 2018.

The pre-study, performed with 100 respondents, employed the determinants identified in the findings

of existing studies. An additional debt behavior determinant was found, i.e., "reluctance to use a large amount of cash or inability to use cash in certain places because non-cash transactions are prioritized by the vendors (Reluctance to Use Cash or RUC)". This determinant was found from the answers to statements 14, 19, and 31 in the first data collection phase.

From their answers, our respondents seemed to be able to pay in cash because they had certain attitudes, perspectives, and reasons regarding the use of money. Debt was used by these respondents in transactions where only non-cash means was possible, such as credit-card or debit-card payments, toll payments, and refueling. Ten determinants were finally used in the second phase of the study. Based on previous information and pre-study findings, we formulated the following hypotheses:

H_1: Relatively small income has a positive effect on household consumption.

H_2: Economic and financial difficulties due to long-lasting small income have a positive effect on household consumption.

H_3: Meeting immediate and urgent needs has a positive effect on household consumption.

H_4: The increasing number of dependents and household expenses due to marriage as well as number of children have a positive effect on household consumption.

H_5: Influence of the closest people or social pressure has a positive effect on household consumption.

H_6: Capabilities in managing debt money have a positive effect on household consumption.

H_7: Demands for quality and lifestyle and social status and class have a positive effect on household consumption.

H_8: The convenience and expansion of bank and non-bank financial institutions have a positive effect on household consumption.

H_9: Expansive promotions through visual media,

Table 1: The Determinants of Household Debt Behavior

No	Determinant	Study
1	Relatively small monthly income, inequality of income distribution, low real wages, and stagnant salary.	Ekici & Dunn (2010), Berisha & Meszaros (2018), Kim & DeVaney (2001), Worthington (2006), Jenkins et al. (2009), Barba & Pivetti (2009), Georgarakos, Haliassos, & Pasini (2012), and Kumar & Mukhopadhyay (2013)
2	Facing financial difficulties, debt is an alternative source of income instead of wages.	Barba & Pivetti (2009) and McCloud (2010)
3	Sudden or urgent needs and a shortcut to own a product.	Legge & Heynes (2009), Georgarakos, Haliassos, & Pasini (2012), Kumar & Mukhopadhyay (2013), and Mehrotra & Yetman (2015)
4	Increasing household expenses and dependents, marital status, marriage, divorce, number of children, household age, gender, and education.	Reiakvam & Solheim (2013), Kim & DeVaney (2001), Hoeve et al. (2014), Legge & Heynes (2009), Rajagopal (2011), and Dunn & Mirzaie (2009)
5	Influences from the closest people, social pressure, neighboring families, close friends, and coworkers.	Georgarakos, Haliassos, & Pasini (2012), Cynamon & Fazzari (2008), Hoeve et al. (2014), Worthington (2006), Brown, Taylor, & Price (2005), and Setterfield & Kim (2016)
6	Money/debt and budget management capabilities.	Cynamon & Fazzari (2008), Shahrabani (2012), Brown et al. (2013a), and Mian & Sufi (2011)
7	Social class and status can improve life quality and lifestyle.	Lewis (2007), Cynamon & Fazzari (2008), and Barba & Pivetti (2009)
8	Expansion and convenience of banks and non-bank institutions, banking deregulation, loosened liquidity, aggressive promotion of credit, low interest rates.	Reiakvam & Solheim (2013), Baker (2014), Prinsloo (2002), Hoeve et al. (2014), Mian & Sufi (2011), Lewis (2007), Mutezo (2014), and Worthington (2006)
9	Media influence: visual, online/internet, advertisements, and television commercials.	Cynamon & Fazzari (2008), Alam et al. (2014), Carradore (2012), and Legge & Heynes (2009)

Source: Relevant studies, summarized

online media, and TV advertisements have a positive effect on household consumption.

H_{10}: Reluctance or inability to use cash transactions has a positive effect on household consumption.

3. Method

3.1. Research design

Survey research design used in this study has the following characteristics: (i) the information was collected from a group of households to describe the population characteristics, (ii) the information was collected from questionnaires and the answers were compiled into the research data, and (iii) the data were collected from households that make up the samples (Fraenkel, Wallen, & Hyun 2012). Furthermore, we categorized information collected from surveys as (i) real daily-life conditions concerning household debt behavior, (ii) opinions and attitudes towards household consumer debt, or (iii) facts in household life partly related to debt.

Population, Samples, and Sampling Techniques. In 2017, there were 1,560,436 households in Riau (Central Bureau of Statistics of Riau Province 2017); number of households with debt were unknown. This study follows Lemeshow sampling model (Lemeshow et al. 1990) as detailed below:

$$\mathrm{n} = \frac{\mathrm{Z}_{1-\alpha/2}^2 \cdot \mathrm{P} \cdot \mathrm{q}}{\mathrm{d}^2} \ \text{ or } \ \mathrm{n} = \frac{\mathrm{Z}_{1-\alpha/2}^2 \cdot \mathrm{P}(1-\mathrm{P})}{\mathrm{d}^2}$$

Description:

n : minimum number of samples selected;

$\mathrm{Z}_{1-\alpha/2}$ or Z^2 : degree of trust; the error rate used is $\alpha = 0.05$ degree of trust, with $\mathrm{Z} = 1.96$;

P : true yet unknown proportion in population whose value ranges from 0.05 to 0.90 plus 0.05 (e.g., proportion of households without debt);

q : $1 - \mathrm{P}$ (e.g., proportion of households with debt);

d : limit of error/absolute whose value ranges from 0.01 to 0.25; the absolute precision used in this study is 0.05.

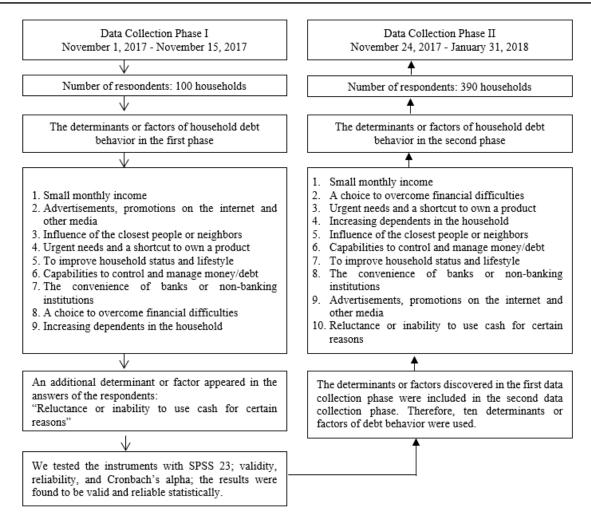| Data Collection Phase I November 1, 2017 - November 15, 2017	Data Collection Phase II November 24, 2017 - January 31, 2018
Number of respondents: 100 households	Number of respondents: 390 households
The determinants or factors of household debt behavior in the first phase	The determinants or factors of household debt behavior in the second phase
1. Small monthly income 2. Advertisements, promotions on the internet and other media 3. Influence of the closest people or neighbors 4. Urgent needs and a shortcut to own a product 5. To improve household status and lifestyle 6. Capabilities to control and manage money/debt 7. The convenience of banks or non-banking institutions 8. A choice to overcome financial difficulties 9. Increasing dependents in the household	1. Small monthly income 2. A choice to overcome financial difficulties 3. Urgent needs and a shortcut to own a product 4. Increasing dependents in the household 5. Influence of the closest people or neighbors 6. Capabilities to control and manage money/debt 7. To improve household status and lifestyle 8. The convenience of banks or non-banking institutions 9. Advertisements, promotions on the internet and other media 10. Reluctance or inability to use cash for certain reasons
An additional determinant or factor appeared in the answers of the respondents: "Reluctance or inability to use cash for certain reasons"	The determinants or factors discovered in the first data collection phase were included in the second data collection phase. Therefore, ten determinants or factors of debt behavior were used.
We tested the instruments with SPSS 23; validity, reliability, and Cronbach's alpha; the results were found to be valid and reliable statistically.	

Figure 1: Determinants of Household Debt Behavior in Data Collection Phase II
Source: Author's Pre-studys

The number of samples was determined as follows:

$$n = \frac{Z_{1-\alpha/2}^2 \cdot P(1-P)}{d^2} = \frac{1,96^2 \cdot 0,5(1-0,5)}{0,05^2} = \frac{0,9604}{0,0025}$$
$$= 384,16 \text{ rounded to } 390$$

Sample size determination using Lemeshow model is more flexible because the maximum estimate of the estimated sample ranges from 0.05 to 0.90, indicating smaller or larger estimated households with debt and without debt. Furthermore, non-probability sampling and purposive sampling were employed (Singh 2006); the latter was preferred to select samples based on specific objectives and considerations (judgmental sampling), namely, randomly choosing a sample from which data are obtained using certain considerations in accordance with the objectives and the problem under study. Sampling was carried out in five regions/cities in Riau, i.e., Teluk Kuantan (44 respondents), Pelalawan (18 respondents), Bangkinang (76 respondents), Pekanbaru (200 respondents), and Dumai (152 respondents). Thus, the sample consists of 490 respondents in total, 100 of which were used in the first phase of the study while the remaining 390 were used in the second phase.

Variables and Measurements. Variables employed in this study comprise Household Consumption (HCP) as the endogenous variable and Small

Income (SIC), Money Difficulties (MDF), Urgent Needs (UND), Household Expenses (HDE), Closely Related Person (CRP), Managing Debt (MDB), Lifestyle (LFS), Convenience of Banks (COB), Reluctance to Use Cash (RUC), and Media Promotion (MPR) as the exogenous variables. To measure them, we used a five-point Likert scale to determine respondents' level of agreement with the provided statements from strongly disagree with a score of one to strongly agree with a score of five (Brown 2010). We used nine indicators for HCP, eight indicators for SIC, eight indicators for MDF, eight indicators for UND, eight indicators for HDE, eight indicators for CRP, seven indicators for MDB, eight indicators for LFS, seven indicators for COB, seven indicators for RUC, and eight indicators for MPR.

Following tests were carried out to validate the instruments in the pre-study and the second phase of the study: a validity test at the limit of 0.09, a reliability test with Cronbach's Alpha at the limit of 0.60, and data normality test with Kolmogorov-Smirnov One-Sample Test at the p-value limit of >0.05.

3.2. Model and Data Analysis

Based on the literature review and related theories, we estimated a causal relationship between Household Consumption and Small Income, Money Difficulties, Urgent Needs, Household Expenses, Closely Related Person, Managing Debt, Lifestyle, Convenience of Banks, Reluctance to Use Cash, and Media Promotion. Twe formulated the model and analysis of all variables in the following multiple regression equation:

$$\mathrm{HCP} = \beta_0 + \beta_1 \mathrm{SIC} + \beta_2 \mathrm{MDF} + \beta_3 \mathrm{UND} + \beta_4 \mathrm{HDE} + \beta_5 \mathrm{CRP} + \beta_6 \mathrm{MDB} + \beta_7 \mathrm{LFS} + \beta_8 \mathrm{COB} + \beta_9 \mathrm{MPR} + \beta_{10} \mathrm{RUC} + \varepsilon$$

Description:

$\mathrm{HCP} = \mathrm{Y}$: Household consumption;
β_0 : Constanta/Intercept ($\mathrm{Y} = \beta_0$);
$\beta_1 \mathrm{s}/\mathrm{d}\beta_{10}$: Coefficient of Regression;
$\mathrm{SIC} = \mathrm{X1}$: Small Income;
$\mathrm{MDF} = \mathrm{X2}$: Money Difficulties;
$\mathrm{UND} = \mathrm{X3}$: Urgent Needs;
$\mathrm{HDE} = \mathrm{X4}$: Household Expenses (RUTA);
$\mathrm{CRP} = \mathrm{X5}$: Closely Related Person;
$\mathrm{MDB} = \mathrm{X6}$: Managing Debt;
$\mathrm{LFS} = \mathrm{X7}$: Lifestyle;
$\mathrm{COB} = \mathrm{X8}$: Convenience of Banks;
$\mathrm{MPR} = \mathrm{X9}$: Media Promotion;
$\mathrm{RUC} = \mathrm{X10}$: Reluctant to Use Cash;
ε : Error/Disturbance.

4. Results

4.1. Findings

Upon the completion of a series and research process, we performed data coding and tabulating in Excel. The data were then exported to SPSS Statistics 23 for data processing. We ran a series of tests on validity, reliability, and normality, followed by testing and analyzing the results of correlation coefficient/partial test, coefficient of determination, simultaneous test, path coefficient, and hypothesis as follows (Table 2):

Based on the validity test, we declared the 87 statements valid because $\mathrm{r_{count}} > \mathrm{r_{table}}$ at the level of α 0.05 and α 0.01. Similarly, the reliability test with Cronbach's Alpha with a limit of 0.60 proved the reliability of all variables. Further, multiple regression requires normally distributed data, so we ran Kolmogorov Smirnov test with a limit of 0.05 and found the following results (Table 3).

The normality test results showed that the data were normally distributed since all values of Test Statistic > 0.05. Thus, all variables and models met the requirements to proceed to multiple regressions. Multiple regression results are indicated by correlation coefficient = R, coefficient of determination R^2,

Table 2: Validity and Reliability Test

No	Variable	Statement item	Validity			Reliability	
			r_{table} (n 390 α 0.05)	r_{count}	Explanation	Cronbach's Alpha	Explanation
1	X1	X11	0.099	0.294	Valid	0.681	Reliable
2	Small Income	X12	0.099	0.235	Valid		
3		X13	0.099	0.234	Valid		
4		X14	0.099	0.317	Valid		
5		X15	0.099	0.567	Valid		
6		X16	0.099	0.49	Valid		
7		X17	0.099	0.404	Valid		
8		X18	0.099	0.468	Valid		
9	X2	X21	0.099	0.246	Valid	0.61	Reliable
10	Money Difficulties	X22	0.099	0.126	Valid		
11		X23	0.099	0.194	Valid		
12		X24	0.099	0.159	Valid		
13		X25	0.099	0.438	Valid		
14		X26	0.099	0.385	Valid		
15		X27	0.099	0.414	Valid		
16		X28	0.099	0.474	Valid		
17	X3	X31	0.099	0.209	Valid	0.678	Reliable
18	Urgent Needs	X32	0.099	0.248	Valid		
19		X33	0.099	0.162	Valid		
20		X34	0.099	0.202	Valid		
21		X35	0.099	0.559	Valid		
22		X36	0.099	0.449	Valid		
23		X37	0.099	0.513	Valid		
24		X38	0.099	0.61	Valid		
25	X4	X41	0.099	0.327	Valid	0.669	Reliable
26	Household Expenses	X42	0.099	0.405	Valid		
27		X43	0.099	0.127	Valid		
28		X44	0.099	0.245	Valid		
29		X45	0.099	0.466	Valid		
30		X46	0.099	0.436	Valid		
31		X47	0.099	0.449	Valid		
32		X48	0.099	0.494	Valid		
33	X5	X51	0.099	0.121	Valid	0.612	Reliable
34	Closely Related Person	X52	0.099	0.339	Valid		
35		X53	0.099	0.24	Valid		
36		X54	0.099	0.294	Valid		
37		X55	0.099	0.288	Valid		
38		X56	0.099	0.356	Valid		
39		X57	0.099	0.453	Valid		
40		X58	0.099	0.404	Valid		
41	X6	X62	0.099	0.281	Valid	0.716	Reliable
42	Managing Debt	X63	0.099	0.246	Valid		
43		X64	0.099	0.255	Valid		
44		X65	0.099	0.611	Valid		
45		X66	0.099	0.489	Valid		
46		X67	0.099	0.5	Valid		
47		X68	0.099	0.586	Valid		
48	X7	X71	0.099	0.275	Valid	0.61	Reliable
49	Lifestyle	X72	0.099	0.232	Valid		
50		X73	0.099	0.294	Valid		
51		X74	0.099	0.169	Valid		
52		X75	0.099	0.29	Valid		
53		X76	0.099	0.295	Valid		
54		X77	0.099	0.452	Valid		
55		X78	0.099	0.433	Valid		

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No	Variable	Statement item	Validity			Reliability	
			r_{table} (n 390 α 0.05)	r_{count}	Explanation	Cronbach's Alpha	Explanation
56	X8	X81	0.099	0.131	Valid	0.713	Reliable
57	Convenience of Banks	X83	0.099	0.33	Valid		
58		X84	0.099	0.238	Valid		
59		X85	0.099	0.62	Valid		
60		X86	0.099	0.511	Valid		
61		X87	0.099	0.495	Valid		
62		X88	0.099	0.616	Valid		
63	X9	X91	0.099	0.184	Valid	0.647	Reliable
64	Reluctant to Use Cash	X92	0.099	0.183	Valid		
65		X93	0.099	0.135	Valid		
66		X95	0.099	0.562	Valid		
67		X96	0.099	0.44	Valid		
68		X97	0.099	0.498	Valid		
69		X98	0.099	0.55	Valid		
70	X10	X101	0.099	0.181	Valid	0.646	Reliable
71	Media Promotion	X102	0.099	0.169	Valid		
72		X103	0.099	0.433	Valid		
73		X104	0.099	0.289	Valid		
74		X105	0.099	0.335	Valid		
75		X106	0.099	0.363	Valid		
76		X107	0.099	0.49	Valid		
77		X108	0.099	0.464	Valid		
78	Y	Y11	0.099	0.398	Valid	0.702	Reliable
79	Household Consumption	Y12	0.099	0.586	Valid		
80		Y13	0.099	0.467	Valid		
81		Y14	0.099	0.543	Valid		
82		Y15	0.099	0.637	Valid		
83		Y16	0.099	0.52	Valid		
85		Y17	0.099	0.14	Valid		
86		Y18	0.099	0.117	Valid		
87		Y19	0.099	0.192	Valid		

Source: Author's calculation

F_{count}, t_{count} and path coefficient.

Following results were obtained. Correlation of coefficient between the ten independent variables of debt behavior had a strong effect on household consumption at the level of 96.3% or very strong. Coefficient of determination regarding the effect of the ten independent variables was considered very influential at 93%, while the remaining 7% was affected by other variables not included in the research model. F-test revealed that $F_{count} > F_{table}$ (481,082 > 1.8557 at the level α 0.05 percent) and (481,082 > 2.3679 at the level α 0.01), indicating that in general or simultaneously the ten independent variables contributed according to the respective portion of the household consumption studied.

The decision to accept or reject the hypotheses was based on the T-test results. In our calculation, t_{count} was greater than t_{table} at level α 0.10 = 1.64, α 0.05 = 1.96, α 0.01 = 2.58. Thus, eight hypotheses were accepted and two hypotheses were rejected as detailed on Table 6.

Hypothesis testing results were partially obtained by observing the T-test result. Since the results were significant, the hypotheses can be summarized in the following Table 7.

The coefficient paths are shown in the following equation:

$$\begin{aligned} HCP = {}&-5.970 + 0.191_{\text{SIC}} + 0.058_{\text{MDF}} \\ &+ 0.022_{\text{UND}} + 0.171_{\text{HDE}} + 0.030_{\text{CRP}} \\ &+ 0.241_{\text{MDB}} + 0.691_{\text{LFS}} + 0.153_{\text{COB}} \\ &+ 0.123_{\text{RUC}} + 0.196_{\text{MPR}} + \varepsilon \end{aligned} \qquad (1)$$

Table 3: One-Sample Kolmogorov-Smirnov Test

		SIC	MDF	UND	HDE	CRP	MDB
N		390	390	390	390	390	390
Normal Parameters[a,b]	Mean	29.2564	28.2744	29.4410	28.1128	25.7615	26.4205
	Std. Deviation	4.99109	4.62186	4.79346	5.18973	4.75000	4.47416
Most Extreme Differences	Absolute	0.064	0.079	0.082	0.079	0.058	0.104
	Positive	0.051	0.049	0.055	0.035	0.043	0.040
	Negative	-0.064	-0.079	-0.082	-0.079	-0.058	-0.104
Test Statistic		0.064	0.079	0.082	0.079	0.058	0.104
Asymp. Sig. (2-tailed)		.001[c]	.000[c]	.000[c]	.000[c]	.003[c]	.000[c]

		LFS	COB	RUC	MPR	HCP
N		390	390	390	390	390
Normal Parameters[a,b]	Mean	25.3641	27.5308	25.3615	24.0128	29.2256
	Std. Deviation	4.68556	4.44131	4.46524	4.73594	5.81597
Most Extreme Differences	Absolute	0.066	0.104	0.093	0.073	0.089
	Positive	0.066	0.046	0.044	0.047	0.048
	Negative	-0.066	-0.104	-0.093	-0.073	-0.089
Test Statistic		0.066	0.104	0.093	0.073	0.089
Asymp. Sig. (2-tailed)		.000[c]	.000[c]	.000[c]	.000[c]	.000[c]

Note: [a] Test distribution is Normal, [b] Calculated from data, [c] Lilliefors Significance Correction.

Table 4: Model Summary[b]

Model	1
R	.963[a]
R Square	0.927
Adjusted R Square	0.925
Std. Error of the Estimate	1.59229
Durbin-Watson	1.715

Note: [a] Predictors: (Constant), SIC, MDF, UND,
HDE, CRP, MDB, LFS, COB, RUC, MPR
[b] Dependent Variable: HCP

Table 5: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12197.236	10	1219.724	481.082	.000[b]
	Residual	960.908	379	2.535		
	Total	13158.144	389			

Note: [a] Dependent Variable: HCP

Table 6: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-5.970	0.561		-10.637	0.000		
	SIC	0.191	0.040	0.164	4.756	0.000	0.162	6.178
	MDF	0.058	0.032	0.046	1.795	0.073	0.290	3.448
	UND	0.022	0.040	0.018	0.543	0.588	0.177	5.655
	HDE	0.171	0.037	0.153	4.592	0.000	0.174	5.756
	CRP	0.030	0.034	0.024	0.867	0.387	0.249	4.019
	MDB	0.241	0.046	0.186	5.286	0.000	0.156	6.401
	LFS	0.691	0.037	0.556	18.521	0.000	0.214	4.683
	COB	0.153	0.043	0.117	3.558	0.000	0.178	5.618
	RUC	0.123	0.042	0.095	2.959	0.003	0.189	5.303
	MPR	0.196	0.041	0.160	4.775	0.000	0.173	5.797

Note: [a] Dependent Variable: HCP

Table 7: The Summary of Hypothesis Testing

Hypothesis	Path	Coefficient Regression		Explanation
		Coefficient	Significant	
H_1	HCP $\leq$ SIC	0.191	0.000***	Supported
H_2	HCP $\leq$ MDF	0.058	0.073*	Supported
H_3	HCP $\leq$ UND	0.022	0.588	Not supported
H_4	HCP $\leq$ HDE	0.171	0.000***	Supported
H_5	HCP $\leq$ CRP	0.030	0.387	Not supported
H_6	HCP $\leq$ MDB	0.241	0.000***	Supported
H_7	HCP $\leq$ LFS	0.691	0.000***	Supported
H_8	HCP $\leq$ COB	0.153	0.000***	Supported
H_9	HCP $\leq$ RUC	0.123	0.003***	Supported
H_{10}	HCP $\leq$ MPR	0.196	0.000***	Supported

Note: SIC=Small Income, MDF=Money Difficulties, UND=Urgent Needs,
HDE=Household expenses, CRP=Closely Related Person,
MDB=Managing Debt, LFS=Lifestyle, COB=Convenience of Banks,
RUC=Reluctant to Use Cash, MPR=Media Promotion,
HCP=Household Consumption;
Significant at *0.1, **0.05, ***0.01.

Explanation: when we assigned a zero value for each independent variable (SIC, MDF, UND, HDE, CRP, MDB, LFS, COB, RUC, MPR), the remaining debt in household consumption was -5.970 (minus sign indicates obligation that must be paid by the households). The path coefficient of each independent variable to the dependent variable in the order is as follows: LFS, MDB, MPR, SIC, HDE, COB, RUC, MDF, CRP and UND.

4.2. Analysis

Empirically, this study proves that the current determinants of household debt behavior can be shown in the following order.

LFS: A modern lifestyle that every household dreams of. In a household life, a shift in lifestyle and status, consumerism, and imitation of the upper-class life are highly possible due to technological and information development that permeates every household layer. Easier access to technology and information has introduced changes which originally developed in other parts of the world and subsequently became the standards for social status and lifestyle. As argued by Mary M. (2012), technological and information development has affected not only urban communities, but also rural ones. To achieve their desired status and lifestyle, some households find themselves accumulating debt. This condition reflects a consumer's behavior that imitates the lifestyle and behavior of its neighboring environment which is motivated by improvements in life quality and happiness.

MDB: Capabilities to manage money from debt and high motivation in its control. Household debt may form due to strong motivation and confidence in basing financial decisions on personal ability to manage household finance and budget. Households with higher ability in debt management are related to increasing demand for debt to bank and non-bank financial institutions. Eventually, the effect of consumer credit expansion on households will increase. This is in line with studies by Mian & Sufi (2011), Cynamon & Fazzari (2008), Shahrabani (2012), as well as Brown et al. (2013a) who all find that motivation and personal ability are significantly correlated with debt.

MPR: Media promotion. Via continuous exposure, media can shape, dictate, and push households to own a commodity through debt. Intense, all-day promotion in online media, internet, or TV advertisements accessible by all social classes may lead to debt because they tempt households to make a

purchase. Neighbors, friends, and family may also tempt households to accumulate debt as a consequence of consumerism, a show of status and lifestyle, and modern living standards supported by impulsive or compulsive behavior, detracting households from their real life conditions. To overcome this issue, households may try to budget for their needs, consider the benefits of goods they want to buy and make a list of priorities, and sort out all information received which offers goods/services. This is in line with studies from Carradore (2012) and Xiao & Wu (2008) arguing that household consumption is also related to the use of information technology.

SIC: Small monthly income. Small income received for a long time might present a pressure in household finance, leading to greater possibilities to resort to debt to meet households' consumption needs. To overcome this situation, households should try to save money, improve employment status, and increase working hours. Furthermore, local and central governments should pay attention and improve income distribution, especially related to salary and wages. This is in line with studies by Barba & Pivetti (2009) and Brown et al. (2013b) who find an increase in household debt as a response to low salaries and wages or an increase in income that is not proportional to changes and price dynamics in the market.

HDE: Expenses and dependents in the household. The increase in household dependents due to household age, number of children, children's education, health, demands for the fulfillment of needs according to the conditions, and marital status (divorced or single parent), eventually leads to debt. These conditions put pressure on income, require households to consume beyond their income capacity, and allow debt to be an option. Local and central governments should therefore reactivate the National Family Planning Movement and maintain and provide subsidies selectively for education, health,

and Raskin (rice for poor households). This is in line with studies by Reiakvam & Solheim (2013) and Dunn & Mirzaie (2016) where an increase in household debt is found to be occurring along with the development of the households.

COB: Convenience of bank and non-bank financial institutions. Facilities provided by these institutions to households may lead to debt. These facilities, such as financial and banking deregulation, aggressive promotion, easy requirements, loosened liquidity, credit liberalization, competitive interest rates, financial innovation, and greater access to debt, represent an effort to further their expansion since consumer loans (debt) are among the potential and real income sources of these institutions. Thus, non-exclusive services and stable consumer credit interest rates from bank and non-bank institutions are needed by households since they relate to the ability to repay the debt.

RUC: Reluctance or inability to use cash. For certain reasons (such as policies or rules from certain institutions), such reluctance or inability may lead to household debt. For this determinant, we used our assumptions to interpret respondents' answers because re-interviews were not possible and no study so far has provided justification for this determinant. Debt behavior is also caused by households' reluctance to use cash where households prefer to pay in installments even though they have cash readily available. The inability to use cash represents a trend in modern life and is evident in the use of credit cards, debit cards, and other cards due to the convenience they provide in allowing people to avoid carrying large amount of cash. Furthermore, the use of electronic money, digital wallet, and other non-cash payments has started to develop and show an increasing trend (e.g. when shopping at malls or paying for toll roads, hotels, restaurants and cafes, and gas stations). In the future, households might never need to use cash anymore as virtual money becomes common-

place. Future households might never see physical money yet they are able to enjoy its functions. Such condition is made possible by technological and information development, especially in money and banking services.

MDF: Money Difficulties. Long-lasting and continuous financial difficulties may accumulate due to small income and sudden necessity (marriage, sickness, education, accident and others), which may force households to use their savings, resulting eventually in debt. Relevant agencies in local and central governments authorized with salary and wage setting should therefore adjust the regional minimum wage into a standard regional wage, especially in Riau and generally throughout Indonesia.

CRP: Closely related persons. Strong influence from close people (spouse, parents, friends, colleagues, coworkers, peer groups, role models, and neighbors) may trigger debt. Even though this determinant was found to be statistically insignificant (not supported), these people affect the decision over whether or not to apply for debt. For example, a wife may influence her husband's decision, or vice versa. Each party may become a source of suggestions, motivations, and different levels of confidence toward debt.

UND: Urgent needs. Urgent needs and emergency situations experienced by households may cause debt. We found this determinant to be statistically insignificant (not-supported), but in reality it is frequently encountered. This condition is correlated with small income and the absence of savings, assets, or inheritance to be used in emergency situations. Households may overcome such conditions by trying to be more grateful and saving money.

We may therefore conclude that urban household debt behavior is dominantly influenced by lifestyle, ability to manage debt, and the influences from internet and other media caused by the service, accommodation, and social environment of the ur-

ban households. This presents an opportunity to conduct a study of rural household debt behavior.

5. Conclusion

Psychologically, households tend to avoid risk, burden, or debt, but this tendency might be forgone in economic life because of the real conditions faced by households. These include increasing consumption needs and requirements, stagnant real income, increasing household burden and dependencies, household age, and health and education, which put constant pressure on income, especially when insufficient, and push households into debt.

Finding: Of the ten determinants studied, we found modern household lifestyle to be the main determinant of household debt. Such lifestyle is the result of technological and information development, online media, and social influence, tempting households to ignore small incomes, financial difficulties, and other predicaments. The shift from cash transactions to non-cash transactions has also become a common reality, and eventually people might no longer see the physical form of money as they adopt one or several cash replacement cards.

In a theoretical perspective, we have analyzed the contribution of each determinant of debt behavior in household consumption, which in previous studies were not explicitly placed as sequential determinants. Small income or financial difficulties, previously considered a trigger for debt, did not appear to be the case in our findings. Undoubtedly, modern lifestyle is a more precise trigger for debt (Barba & Pivetti 2009; Brown et al. 2013b).

In a practical perspective, our findings are useful in determining the order of determinants of debt behavior in household consumption. Our study has elaborated the findings from Yoon (2011) and Denan et al. (2015) recommending the importance of further studies to discover the determinants of

household debt behavior.

The findings have some further implications: (i) Debt is a savior for households without savings, assets, or inheritance, since it is always available for households experiencing income inequality; (ii) Since consumer credit (debt) is a source of income for banks and non-bank institutions, it is natural for these institutions to foster potential households through the distribution of consumer credits to avoid bad credits; (iii) Households expect an adequate salary or wage adjustment and stable prices of goods; and (iv) A study of behavioral determinants is expected to reflect real household conditions in Riau and in Indonesia in general.

This study has focused on population and samples taken from cities in Riau (Pekanbaru, Dumai, Bangkinang, Pelalawan, and Teluk Kuantan) and excluded rural households. There are possible differences in characteristics between respondents in cities and those living in villages when it comes to the determinants of household debt behavior. We therefore realize that this study has several limitations which subsequently open the opportunities for further study. First, future studies may be conducted in rural areas to determine the determinants of rural household debt behavior. Second, further studies may utilize panel data with a high retention and a larger number of samples.

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