Financial behavior among young adult consumers: the influence of self-determination and financial psychology

Heejung Park

Heejung Park is based at the Department of Marketing, Northern Michigan University, Marquette, Michigan, USA.

Abstract

Purpose – *In the uncertainty of the global economy, many young adults have financial independence from their parents and are making financial decisions in a difficult financial environment. This study aims to focus on debt management behavior for young adult consumers.*

Design/methodology/approach – *The data is from the 2010 National Longitudinal Survey of Youth 1997 (NLSY97). The NLSY97 includes information on US young consumers' financial, demographic and attitudinal characteristics, as well as various socio-economic conditions, making it convenient to explore the relationships between financial behavior and psychology variables. In the 2010 survey, 4,110 young consumers were interviewed.*

Findings – *The results show that self-determination and motivation alone cannot bring about a direct change in financial behavior without the mediation of financial psychology. Therefore, consumer finance research should consider debt-management behavior by presenting different strategies than those currently used.*

Originality/value – *In the self-determination theory, emphasizes the internal grounds for distinguishing self-regulation from personality development and behavior. Specially, this paper deals with the financial behavior of young adult consumers through self-determination theory.*

Keywords *Young adult, Self-determination theory, Financial decision-making, Debt management behavior, Financial psychology*

Paper type *Research paper*

Introduction

Demand for rational and desirable consumer financial behavior is increasing in modern consumer societies (Birkenmaier and Fu, 2019). As going through the Global financial crisis in 2009, researchers insisted that consumer protection should be necessary regarding financial decision-making and behavior (Hansen, 2017). Better financial behaviors are essential for improving quality of life because consumers can manage their own lives and pursue happiness based on sound financial flows. Consumers' financial behavior is important for companies. Many consumers pursue happiness through financial behavior, but certain behaviors can be problematic during life changes or periods of instability. For example, young adults in their late teens and early 20s face considerable changes, such as leaving home and entering college, requiring them to make their own decisions in many areas, including finance (Greenberg and Hershfield, 2019).

Amid uncertainty in the global economy because of the COVID-19, many young adults have financial independence from their parents and are making financial decisions in a challenging financial environment (Price, 2020). However, most research on consumer financial behavior has been focused on adults (Deenanath *et al.*, 2019). Existing research has focused on a variety of consumer financial decisions, such as consumer's low saving

Received 11 December 2020
Revised 9 February 2021
13 March 2021
Accepted 13 March 2021

On behalf of all authors, the corresponding author states that there is no conflict of interest

rate (Kim and Yuh, 2018), credit card debt (Stavins, 2020) and lack of financial knowledge (Bhagwan, 2019). However, these studies' results may not equally apply to young adults (Szendrey and Fiala, 2018).

Young adults are a vulnerable consumer group because their financial situation is less stable than older adults (Lachance, 2012). According to Canada's Financial Agency (2008), 60% of young adults carry debt. In 2008, the Office of the Superintendent of Bankruptcy Canada reported that the number of young adults (18–24 years) submitting insolvency reports had quadrupled since 1996.

Young adults must make various financial decisions themselves, without input from parents or finance experts. This age group has difficulty involving accruing debt (e.g. credit card purchases and student loans) (Gal and McShane, 2012). Because young adults are in a life-cycle stage marked by the start of important economic activities, such as employment and marriage, debt has a serious deletion effect on young adults' consumption of goods and quality of life. Despite such negative impacts, improving debt management among young adults encounters various challenges. According to the Korean Financial Supervisory Service (2010), the average financial literacy score of young adults was 61.8 out of 100 points, around 20 points lower than that of older adults. Besides relative financial illiteracy, young adults have a psychological sense of invulnerability that affects their ability to manage risk (Sotiropoulos and D'Astous, 2012). Even if complex and sophisticated financial products created in the market are supplied to young adults, the improvement in this population's financial behavior is likely to be highly asymmetrical.

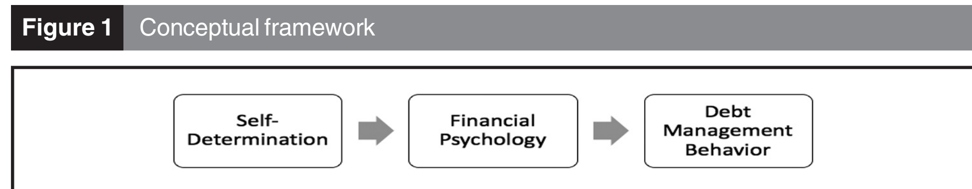
The psychological aspects of consumer financial behavior have been considered only recently, although the consumer's motivation and psychology, the subject of financial decisions, are crucial factors. Current research focuses on the effects of psychological factors on older adults' financial behavior. Therefore, this paper deals with young adult consumers' financial behavior through self-determination theory, which has been widely discussed in psychology and education. This paper seeks to determine whether young adults with internalized motives (self-determination) are more engaged in debt management.

Older adults are less affected by psychological or emotional influences and have a greater ability to control the effects of these influences (Tauber *et al.*, 2017). This study analyzes the impact of financial self-determination theory on debt management behavior. This study provides insights into how to improve young adults' financial behavior and quality of life through debt management behavior. This study has two objectives. One is to figure out the interplay between self-determination and financial anxiety factors. Another objective is to examine whether financial anxiety factors mediate the relationship between debt management behavior and self-determination variables (Figure 1).

Review of the literature

Instead of reviewing the previous literature, this section will explain important concepts of self-determination theory and provide a broad overview of the study of young adults' financial behavior, unlike existing studies focused on older adults' financial behavior. Some

Figure 1 Conceptual framework



existing studies will explain the necessity of debt management. Finally, this section will highlight the importance of psychological factors in young adults' financial behavior.

Self-determination theory

Self-determination theory (Bakker and Oerlemans, 2019) emphasizes the internal grounds for distinguishing self-regulation from personality development and behavior. According to Ryan and Deci (2017), self-determinism is not a force imposed by reward or external pressure but a self-selectable ability, meaning that one can determine one's behavior. The theory of self-determinism is that humans perceive themselves as behaving according to their own will rather than to external rewards or compulsions (Vasconcellos *et al.*, 2020). Also, it assumes that an individual would behave even without a reward or interest because he/she internalizes a certain value or behavior in the socialization process.

Ryan and Deci (2017) argue that intrinsic motivation and external motivation exist on a continuum rather than opposition. Self-determination theory emphasizes self-motivation or intrinsic motivation. Self-determination expresses individual will, whereby the individual does not accept external definitions of his or her strengths and weaknesses but personal desires according to their cognitive structure.

In self-determination theory, motivation and behavior can change according to self-determinism, according to the interaction of an individual's tendency to act interactively and actively with the tendency to be controlled by external conditions (Vasconcellos *et al.*, 2020). This self-determination theory includes four sub-theories, namely, cognitive evaluation, organismic integration, causality orientation and basic psychological needs (Standage and Ryan, 2020).

Cognitive evaluation. Cognitive evaluation assumes that humans have a basic desire to control themselves and to feel competent. This desire plays an important role in intrinsic motivation. Cognitive evaluation focuses on an environment that promotes or inhibits intrinsic motivation and explains factors that induce intrinsic motivation. Individuals are motivated by intrinsic motivation when they are subjected to appropriate social and environmental conditions and when basic psychological needs are met.

Organismic integration. Organismic integration theory argues that various types of approaches should be used in studying human motivation. A person's external motivation depends on his or her perceived autonomy, so there are various external motives. Organismic integration theory explains the process of integrating exogenously synchronized behavior. Self-determination becomes an important intrinsic motive; however, an individual is hardly motivated by an intrinsic motive itself. Rather, a person can be self-determined when extrinsic motives coexist. Therefore, if basic needs are satisfied, external motivation can be internalized and integrated and expressed as desirable behavior.

Causality orientation. Causality orientation theory describes personality traits. People's understanding of the cause of their behavior differs according to varying personal orientations resulting from an individual's growth environment. According to Deci and Ryan (2000), the personality aspects of individuals are divided into three types, namely, an autonomic orientation that regulates behavior based on interest and self-worth; a control orientation that follows the control and direction of others; and a non-motivational orientation based on anxiety about one's ability.

Basic psychological needs. Basic psychological needs theory describes individuals' values and control styles in connection with psychological health. The basic psychological needs are autonomy, competence and relatedness (Deci and Ryan, 2000) and are required for psychological growth and development. In other words, when an individual grows up in an environment that meets basic psychological needs, he or she grows up psychologically and physically. This generally indicates positive behavioral change (Ryan and Rigby, 2019).

The core purpose of self-determination theory is to induce intrinsic motivation in an individual and r to help the individual internalize externally synchronized behavior to reach an integrated adjustment. In this study, self-determination is defined according to marketing research as "consumers internalizing and integrating the values and beliefs of their actions through socialization processes."

Mazher (2020) explores self-determination as a theoretical background for goal-setting and pursuing behavior in consumers. Kivetz (2005) suggests self-determinism as a rationale for studying consumers' responses to corporate promotion. Botti and Mcgill (2006) argue that consumers' self-determination plays a moderating role in the relationship between optimal consumption and life satisfaction. Oh and Jung (2018) also mention that self-determinism has a positive effect on the attachment intensity of celebrity brands. In conclusion, applying self-determination theory in marketing focuses on analyzing consumers' behaviors through multidimensional analysis of consumers' purchase motives.

Constituent factors of self-determination theory

Humans have three basic psychological needs, namely, autonomy, competence and relatedness (Holt *et al.*, 2019). Human psychological needs theory is a comprehensive concept that understands the motivation of self-determinism and explains the dynamic relationship between an individual's psychological health and behavior.

Autonomy. Autonomy requires individual freedom to decide what is important and valuable (Ryan and Deci, 2017). People with autonomy perceive themselves as the source of their actions. Autonomy can provide internal rewards, such as fun, ability enhancement and self-realization (Ryan and Rigby, 2019). In addition, from the viewpoint of attribution theory (Fishman and Husman, 2017), autonomy refers to behavior and personality that reflects self-determination. However, autonomy is not the opposite of dependence but reflects subjective will and choice. Those with autonomy can take direction from others (Ryan and Deci, 2017). Therefore, autonomy in this study is defined as "a psychological state whereby consumers (young adults) can exercise their will their financial behavior."

Competence. Everyone wants to be a capable person. Competence is the desire to find and act on the optimal conditions of talents that individuals possess (Schwarzenthal *et al.*, 2017). Self-efficacy is similar to competence because it is the act of exerting and developing individual ability. Competence also involves a feeling of confidence and efficiency through action. Competent individuals find opportunities to use their capabilities while interacting with the social environment (Deci and Ryan, 2000). According to Ryan and Deci (2017), positive feedback satisfies competence and promotes intrinsic motivation. Support for competence promotes self-regulation of externally synchronized behavior and induces internalization of motivation. A person who does not feel competent cannot internalize control over his or her actions to achieve goals. Therefore, competence in this study is defined as "the self-confidence and ability of an individual to act in such a way as to meet his or her financial goals."

Relatedness. One factor promoting intrinsic motivation and internalization is the fulfillment of the need for a relationship. The desire to maintain an intimate relationship with others and appreciate their value suggests the importance of social relations (Ryan *et al.*, 1992). The importance of social relations can be understood by the extent to which social rules are maintained. According to Ryan and Deci (2017), individuals have more synchronized internal search activities if they have satisfactory relationships. Relatedness means perceiving connection with others and a sense of belonging to the community (Kim *et al.*, 2018). Thus, individuals who have experienced friendly interaction with others can interact with others in a more sophisticated fashion than those who have not (Martin *et al.*, 2018). The higher the quality of interaction with others, the more new and more creative activities are carried out (Zhang *et al.*, 2020). Thus, relatedness plays a crucial role in promoting the

internalization of external causes and promotes internal motivation and behavior changes (Ryan and Deci, 2017). Therefore, relatedness in this study is defined as "the tendency of consumers to maintain and develop financial behavior by seeking and considering relationships with others."

Young adult and debt-management behavior

Previous studies have taken many approaches to studying financial behavior, including investigating consumer financial knowledge and attitudes (Tang and Baker, 2016). According to Hadar, Sood, and Fox (2013), consumer financial knowledge understanding attained by consumers through the search for financial information. Consumer financial attitude is also important in understanding behavior. This paper proposes a new model of consumer financial attitudes summarized as a mindset prepared in the financial field. The two concepts of consumer knowledge and attitude are important in understanding consumer financial ability, which is an important factor in understanding consumers' financial behavior (Lusardi *et al.*, 2010). Financial ability is defined variously. One widely used term, "financial literacy," concerns an individual's knowledge and comprehension (Hilgert *et al.*, 2003). It can also be defined as knowing the most basic economic concepts to make reasonable decisions regarding savings and investment (Lusardi and Mitchell, 2007). A second term, "financial capability," encompasses knowledge and comprehension and financial responsibility (Lusardi and Mitchell, 2007), emphasizing how consumers choose and allocate financial resources.

According to the Financial Services Authority of the UK (FSA, 2005), consumers with financial capability can make good financial management decisions, effectively manage money, credit and debt and assess the need for insurance and security. Financial capability includes consumers' knowledge, understanding, skills, motivation and self-confidence (Zakaria and Sabri, 2013). When consumers' financial ability is high, their financial behavior positively. Many previous studies have discussed the financial behavior of adult consumers (Servon and Kaestner, 2008). However, there is a lack of understanding of young adult consumers' behavior. Unlike previous studies, this study seeks to understand young adults' financial behavior in terms of their financial ability, considering self-determination.

Financial psychology

Consumer anxiety has recently come to the fore in many studies. According to the Gallup Survey, maintaining necessary living costs increased from 41% in 2007 to 58% in 2011. Also, in 2011, more people were worried about their financial life than in 2001 (*The Huffington Post*, August 15, 2011). The underlying cause of this financial anxiety is not only macroscopic events, such as the global economic crisis but also micro-events related to the financial behavior of individual consumers (Hudson *et al.*, 2017). Financial worries are not objective: one's beliefs and emotions contribute to the anxiety.

According to Ricciardi (2008), financial worries negatively hurt financial decisions. Financial worries can also increase stress beyond financial decision-making (Parkinson and Creswell, 2011). Financial psychology affects financial decision-making and behavior. Given this, can financial anxiety be eased by existing means of financial education? In recent years, the power of financial choice has been explored in terms of both financial psychology and financial capability (Menkhoff *et al.*, 2006). According to Lawson and Klontz (2017), negative financial psychology can prevent consumers from using good judgment and realizing the best profit. Carver and White (1994) developed a tool to measure financial inhibition. This study seeks to build on existing research to develop additional measures of financial psychology.

Hypotheses

Research question and hypotheses

An important question remains unanswered in the literature. The research main problem of this study is that does self-determination affect financial psychology in such a way as to encourage good financial behavior (debt management)? Answering this question requires recognizing ways to conceptualize self-determination, which is consumer motivation. This can be done by observing self-determination as a latent outcome variable and a financial psychology predictor. There are two specific cases. In the first case, self-determination can be operationalized by a set of sub-variables that define' motivation. The first case is related to *Hypotheses 1–Hypotheses 3*.

H1. Competence (self-determination) is positively associated with a) financial description and b) debt-ratio change behavior.

H2. Autonomy (self-determination) is positively associated with a) financial description and b) debt-ratio change behavior.

H3. Relatedness (self-determination) is positively associated with a) financial description and b) debt-ratio change behavior.

In the second case, this latent construct is related to a subjective measure of psychology finance. A statistically significant relationship between the index of self-determination and the outcome of financial psychology implies that self-determination incites positive financial psychology. The second case is related to *Hypotheses 4*.

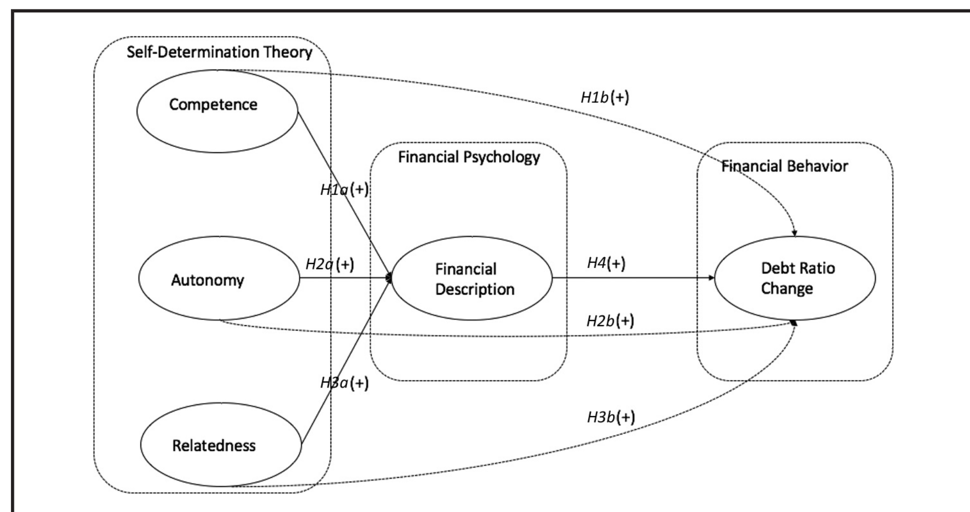
H4. Financial description features mediate the relationship between self-determination and financial behavior (debt-ratio change behavior).

Testing this framework allows for direct measurement of whether self-determination (i.e. motivation) leads to increased positive financial psychology (Figure 2). To clarify the mediation of financial psychology association between self-determination and financial behavior (debt management), the methodological framework controls for age to choose young adult consumers.

Methodology

The most effective technique for analyzing causal relationships is probably structural equation modeling (SEM). This method is a combined form of path analysis and

Figure 2 Methodological framework and hypothesis model



confirmatory factor analysis and many consumer behavior researchers have used them (Thelwall and Wilson, 2016). The number of papers published using only correlation, regression and factor analysis decreases. According to Thelwall and Wilson (2016), the late 1990s saw an astounding increase in the publication of social science articles on structural equation models, about 50 per year.

This study uses SEM to understand young adult consumer debt management. Self-determination variables were investigated based on autonomy, competence and relatedness. This paper complements the lack of description with existing SEM using mediator variables. This study shows whether the financial psychology variable has a mediation effect on self-determination and debt management variables.

This study has one dependent variable: debt-ratio change. The aim is to investigate financial psychology and self-determination variables, such as autonomy, competence and relatedness. Analyzes were conducted to examine relationship and causation. More detailed descriptions of each variable's measurement will be given below.

Description of data

The data is from the 2010 National Longitudinal Survey of Youth 1997 (NLSY97). It was collected from a nationally representative 8,984 people born between 1980 and 1984. At the time of the first interview, respondents' ages ranged from 12 to 18. The NLSY97 includes information on US young consumers' financial, demographic and attitudinal characteristics and various socio-economic conditions, making it convenient to explore the relationships between financial behavior and psychology variables. This paper uses a sub-sample of 4,110 respondents who answered the debt management question.

Dependent variables from the data

The debt-ratio variable is organized by debt amount and asset amount variables. In this research, the asset amount variable comprises two asset variables (financial asset variable and non-financial asset variable). The financial variables are measured by dollar amount.

$$\textit{Debt Ratio Variable} = \frac{\textit{Amount of debt}}{\textit{Amount of financial asset} + \textit{Amount of non financial asset}}$$

It is important to assess change in young adults' debt ratio. Therefore, this study confirms that debt ratios change as consumers age from their 20s into their 30s. This study is appropriate to use the debt ratio change among young adult consumers. Therefore, the dependent variable is the change in the debt ratio between young adults in their 20s and those in their 30s.

Independent variables from the data

In this research, self-determination variables analyze young adult consumers' debt-management behavior and financial psychology. Therefore, each variable's parameters define the main variables of the study for empirical analysis. Based on these definitions, we can see the three main variables of self-determinism and financial psychology through the variables that best reflect the existing data.

The competence variable consists of one sub-variable. Competence was newly defined to fit this research topic. In this study, competence is the financial confidence and ability of young adults to take actions to meet a financial goal. Competence comprises one item, namely, financial risk tolerance. Financial risk tolerance was measured by a single question:

“how would you rate your willingness to take risks in financial matters?” Willingness was rated from 0 to 10, where 0 means “unwilling to take any risks” and 10 means “fully prepared to take risks.” Risk tolerance can measure financial confidence and ability to behave in such a way as to meet the consumer’s financial goals. Competence can be measured through risk tolerance (Williams and Baláž, 2013). As this study is highly relevant to financial behavior, financial risk tolerance is an appropriate variable for the study.

The autonomy variable also was newly defined to match the research theme. In this study, autonomy is a personality type wherein consumers (young adults) can make financial decisions according to their will. So, the autonomy latent variable was constructed using four personality items, namely, extraverted, dependable, open and calm. Each item was measured using a regulated scale within the data set. A seven-point Likert scale calculated extraversion. The average extraversion score was 5.28 (*SD* = 1.37). A seven-point Likert scale calculated dependability. The average dependable score was 6.10 (*SD* = 1.07). Likewise, the openness variable was calculated by a seven-point Likert scale. The average extraverted score was 5.73 (*SD* = 1.26). The calmness variable was measured in a slightly different way. It measured anxiety rather than calm. Therefore, in this paper, we use the anxiety measurements in reverse.

The relatedness variable was also newly defined to fit the research topic. In this study, relatedness is a condition in which consumers (young adults) consider and pursue relationships in determining financial behavior. The relatedness latent variable was constructed using four attitudes toward rules, namely, supporting rules and traditions, not bending the rules, not following rules and breaking the rules. Each item was measured using a regulated scale within the data set. As with the discussed variables, these four variables were calculated by a seven-point Likert scale. In this study, an individual’s relatedness can be measured by how much an individual wants to maintain the rule.

Next, a financial psychology variable identifies meditators between self-determination theory variables and debt management (financial behavior). According to Reisch and Zhao (2017), the consumer’s economic theory explains consumer choice based on a rational maximization model. However, there is a lack of information on how consumers make choices. Economic theory has suffered from systematic errors, for example, failure to ignore sunk costs, search behavior, choosing not to choose and regret. Many studies have recently approached psychological aspects in terms of individuals’ perceptions. This can be described as behavioral economics. Self-determination in reasonable consumers should bring about a positive change in financial behavior. However, it is difficult to predict financial behavior by self-determination theory alone. Therefore, this paper attempts to identify the mediation effect through financial psychology variables between self-determination and debt management behavior. In this study, the financial psychology variable is defined as how consumers (young adults) think about and describe their financial condition. This expresses an individual’s financial psychology. A single question measured description of financial condition: “which of the following best describes your financial condition?” The answers consisted of a five-point scale. Thus, in this study, we can see whether the individuals’ positive financial psychology has a mediation effect.

Statistics programs for methods and analyzes

In this research, STATA 14.0 was used for testing SEM. Confirmatory factor analysis (CFA) was used before SEM. In other words, to prove the theoretical model, the CFA method was first used to determine the relationship between the established factors. Then, the hypothesis was set up by applying SEM, which is an equation model to grasp the causal relationship between each model.

Results

Descriptive analysis of the sample

Approximately 51% of respondents were male and 49% female. The mean age is not important in this research as it focuses on young adults. Data was collected from individuals in their 20s and 30s to assess changes in their financial condition. The samples were born between 1980 and 1984, with the average birth year being 1,982.01. Most respondents are categorized into four races. Approximately 26% of respondents were black, 21% were Hispanic and 53% were other (mixed-race or other). Descriptive statistics for the sample are shown in Table 1.

Factors related to debt ratio change (financial behavior)

Figure 3 demonstrates the results from the structural equation model. Benchmarks from Hu and Bentler's (1999) two-index presentation strategy were used when evaluating the model: NNFI (TLI) and SRMR (NNFI of 0.96 or higher and an SRMR of 0.09 or lower); RMSEA and SRMR (RMSEA of 0.06 or lower and an SRMR of 0.09 or lower); and CFI and SRMR (CFI of 0.96 or higher and an SRMR of 0.09 or lower).

This research model fits Indices in SEM with Benchmarks from Hu and Bentler's Two-Index (Hooper, Coughlan, and Mullen, 2008). While the model's chi-square was significant ($x^2[30] = 211.23$, $p < 0.001$), among fit used indicators, RMSEA and SRMR combination indicators of fit were well within the recommended guidelines: RMSEA = 0.038 and SRMR = 0.025. All measurements were significant at $p < 0.001$.

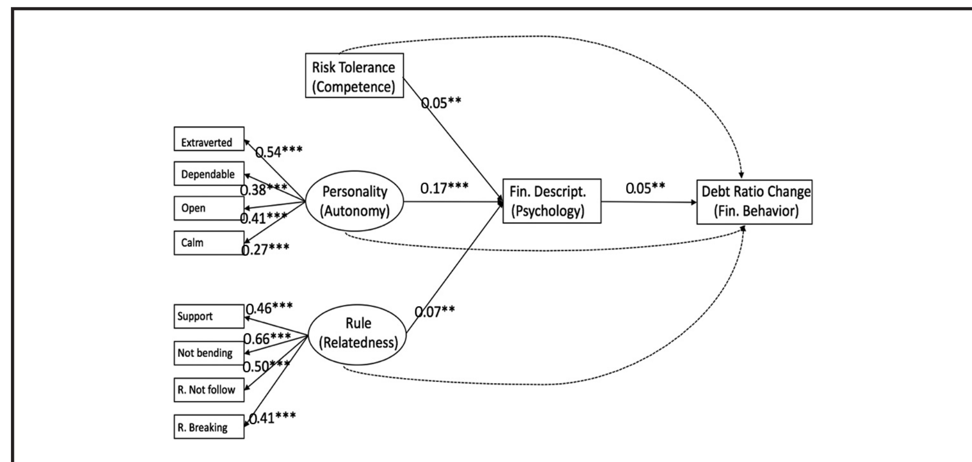
Figure 3 indicates that nearly all hypotheses were supported except a direct effect of self-determination variables on debt change behavior (financial behavior).

First, financial risk-tolerance (i.e. the indicator of competence in the model) was defined by subjective financial risk tolerance. Within the model, competence was positively associated with subjective financial risk tolerance. However, financial risk-tolerance (i.e. the indicator of competence in the model) and debt-management behavior have no significant effect. This model does not show a direct influence of competence on financial behavior. However, competence does significantly influence subjective financial description, which is one of the financial psychology variables. So, this finding supports *H1a*.

Table 1 Descriptive statistics ($N = 4{,}110$)

Variable	*Mean*	*SD*	*Min*	*Max*
Self-determination theory				
Competence variable				
Risk tolerance	3.96	2.77	0	10
Autonomy variable				
Extraverted	5.28	1.37	1	7
Dependable	6.10	1.07	1	7
Open	5.73	1.26	1	7
Calm	4.44	1.83	1	7
Relatedness variable				
Supporting rules	5.10	1.59	1	7
Not bending rules	4.60	1.88	1	7
R. Not following rules	3.58	1.92	1	7
R. Breaking rules	4.70	2.18	1	7
Financial psychology variable				
Descript. of Fin. Cond.	2.57	1.04	1	5
Financial behavior				
Debt-ratio change	–0.60	10.36	–148	622.77

Figure 3 The relationship between self-determination and debt-management behavior ($N = 4{,}110$)



Second, autonomy was described by combining four kinds of personality related to autonomy. Those who received a high score in personality traits related to autonomy reported a positive overall financial description. Study participants (young adults) who reported positive personality for autonomy were more likely to describe their financial condition positively. However, positive personality (i.e. the indicator of autonomy in the model) has no significant effect on debt-management behavior. This model can find no direct influence of autonomy on financial behavior. So, this finding supports *H2a*.

Third, relatedness was described by four rule variables. Those who received a high score in supporting rules reported a positive overall financial description. Study participants (young adults) who reported positive regulatory compliance were more likely to describe their financial condition positively. However, positive regulatory compliance (i.e. the indicator of relatedness in the model) had no significant effect on debt-management behavior. So, this finding supports *H3a*.

Finally, the relationship between financial description and debt-management behavior was positive and statistically significant. This finding supports *H4*. This suggests that young adult consumers whose financial sentiment is positive have a positive change in financial behavior. Among young adult consumers, the higher the psychological stability of their financial condition, the more positive change is seen in their financial behavior related to debt. Psychological awareness has led to positive changes in financial behavior.

The result also noted that no significant results were found in the three hypotheses (*H1b, H2b* and *H3b*) discussed above. The sub-determinants of self-determination have no direct effect on the change in financial behavior. Thus, we can see that financial psychology (i.e. financial description) has a mediation effect. We can see that financial psychology (i.e. financial description) has a full mediation effect between self-determination and financial behavior. In several previous studies, self-determination has been shown to have a positive effect on consumers' behavior (Patrick and Williams, 2012). However, this study finds no direct influence on financial behavior (debt-management) among young-adult consumers. This implies that young-adult consumers cannot expect positive financial behavior if they do not have psychological financial stability, even if they have their internal motives in self-determination theory.

Discussion

The development of various financial products has resulted in a variety of choices regarding products or financial services related to consumers' finances. Moreover, young-adult consumers have difficulties in financial decision-making and financial behavior compared to older adult consumers. Although the number of consumers making self-determined decisions has increased, this trend does not extend to positive financial behavior among young adults. Therefore, this study confirmed that financial psychology mediates the relationship between self-determination and financial behavior among young-adult consumers.

This paper examines the applicability of the theory by incorporating self-determination theory, which has been studied in education and psychology, into young adults' financial behavior. The research problem was solved through empirical analysis. Consumers' self-determinism and financial psychology are important factors in achieving financial well-being through debt management. The results show that financial psychology has mediation effects between self-determination and financial behavior. Details of the study are as follows. First, the components of self-determination theory (competence, autonomy and relatedness) positively affect financial psychology (self-financial description). With young adults with high competence, autonomy and relatedness, the psychological state of their financial situation is positively described. However, competence, autonomy and relatedness did not directly influence debt-management behavior. These results show that a positive influence of financial psychology (self-financial description) exists, although the components of self-determination theory cannot confirm the impact on direct financial behavior. This result cannot explain the positive change of direct financial behavior when self-determination is high in young adult consumers, but the positive situation of financial psychology can be predicted. Second, young adults' positive portrayals of financial status can identify positive behavioral changes in debt management. This suggests that young adult consumers are more positive about their debt management behavior when they feel positive about themselves. Third, this study verified the hypothesis of the full-mediation effect hypothesis through the previous two results. The motivation of the self-determination of the young adult consumer is confirmed by full-mediation that indirectly affects financial behavior (debt-management behavior) through financial psychology (self-description of the financial condition). These results should explain how theoretical contributions and managerial implications can be applied to consumers in one country and to consumers in one country and global consumers.

Theoretical expansion

In this research, we examined the effect of self-determination theory on young-adult consumers' financial behavior. The theoretical implications that can be presented through this are as follows. First, previous research studies concerned education of young students or the study of change in general consumers' behavior and brand recognition. In recent years, young-adult consumers are increasingly determining their financial behavior based on their environment. So, studies of these factors have significant academic value in understanding young-adult consumer's young-adult consumers young-adult consumers' financial behavior, young-adult consumers and young consumers' financial behavior. Second, self-determination components have indirect effects on young adult consumers' financial behavior, especially debt-management behavior. This differs from the immediate behavioral change discussed through self-determination theory in previous studies. A positive change in young adult consumers' financial behavior is can confirm the need for a mediation effect. Third, financial psychology can lead to a positive change in young adults' self-determination and motivation to change their financial behavior. The psychology of finance needs to be considered to understand consumers' financial behavior when using self-determinant theory.

Expansion for practitioners and policymakers

First, practitioners should provide a consumption environment to increase the self-determination of consumers. The financial information provided by young adults to businesses is further complicating the financial behavior of young-adult consumers. Such an environment can cause a decrease in young adults' self-determination. Young-adult consumers' financial behavior can be expected to change in a negative direction. It can be predicted that the decrease in self-determination negatively affects young adults' financial psychology or financial behavior. From a long-term viewpoint, this can lead to continued consumption contraction by creating a negative financial environment for consumers. Therefore, companies must provide information that encourages self-determination among young adults; companies also need to have a marketing strategy that promotes self-motivation in young-adult consumers. For example, financial institutions should provide financial camps and financial education for young consumers to raise young consumers' interest in finance. This increased interest could encourage young consumers to make their own financial decisions. Existing various financial education and camps are provided by public institutions such as the national financial educator's council (Wagner, 2019). However, banks and credit card companies should improve young consumers' understanding of finance and inspire self-determination through such education and camp.

Second, young consumers' negative financial sentiments can lead to negative financial behavior. Poor debt-management debt is simply not an extension of the individual's debt. Financial companies can affect all aspects of assets and liabilities. Poor debt-management presents difficulties for financial services and products. Specifically, negative behaviors associated with the young-adult debt negatively affect individual cash-flows and these negative financial behaviors negatively affect both assets and liabilities of financial organizations. Therefore, companies should support consumers' financial well-being by creating an environment (by providing a variety of financial tools and information) that can expand the financial abilities of young adults and create positive financial behavior. For example, financial institutions to need to provide psychological stability services such as financial therapy for young consumers and marketing strategies that provide various financial information. From a long-term perspective, such financial therapy can be a positive marketing strategy that can sustain long-term relationships with young consumers based on consumer sentiment.

This paper also has implications for policymakers. First, financial policies for existing young-adult consumers are largely divided into two categories, namely, finance education and financial protection. However, as this result shows, financial psychology's influence on financial behavior is high for young-adult consumers. In addition, even if young adults have high self-determination, financial behavior cannot be explained absent financial psychology. Therefore, we propose consumer financial therapy for young adults. This paper has confirmed that psychological factors have a greater impact on young adults than older adults. However, previous studies lacked policy proposals for consumers' financial psychology. The results indicate the necessity of a financial therapy policy. Second, we need specific financial policies for young adult consumers. There are few consumer financing policies for young adults. The FRB has amended or enacted several regulations for the financial sector regulation of consumers who have suffered from the economic crisis (e.g. restrictions on predatory loans and opaque home equity loans). In 2009, the Obama Administration introduced a variety of policies to curb deceptive loan practices, which have proven to be effective. However, young-adult consumers are exposed to more financial risks due to their financial choices and behaviors. Therefore, detailed policy proposals for young-adult consumers are needed.

Limitations of the study

First, this study is limited to young adults and cannot be generalized to all consumers. Future studies should aim to determine whether self-determination leads to behavior changes in consumers in general. Second, as in previous studies, this study limited the components of self-determination to competence, autonomy and relatedness, factors used in pedagogy and psychology. Possibly, more factors might be found specifically within the field of consumer science. Third, secondary data sets were used in this study, presenting a difficulty in that a researcher cannot directly construct the desired question. For example, we can guess young adults' self-determination through variables related to self-determination. However, it is difficult to extract direct information regarding self-determination. Therefore, future studies will need to collect data through surveys to allow us to predict self-determination. Finally, this study investigated the effects of financial psychology on young-adult consumers' self-determination components and debt-management behavior. One subjective question was used to measure financial psychology, meaning there is a possibility that the psychological part of an individual is over-or under-estimated. Therefore, future studies need to use a scale specifically related to financial psychology.

Conclusion

This study suggests that self-determination theory should consider financial psychology to influence debt-management behavior among young-adult consumers. This differs from previous studies in various ways.

First, this study helps to understand better young-adult consumers' financial behavior. Previous studies have focused on changes in the financial behavior of adult consumers. Young adults need to attain financial literacy and ability because debt-management during the young adult period can affect the whole of the consumer's financial life. In addition, this study presents a solution to poor debt management through self-determination theory. In previous studies, self-determination theory was used to predict consumer behavior (Gilal *et al.*, 2020). This study uses self-determination theory to explain debt-management behavior. Finally, beyond the consumer finance education presented for debt management behavior change, this paper indicates the necessity of self-determination and the role of financial psychology. Horwitz and his colleague (Horwitz *et al.*, 2019) emphasize the impact of financial therapy on changing consumers' financial behaviors. This study also shows that self-determination and motivation alone cannot bring about a direct change in financial behavior without the mediation of financial psychology. During the young-adult years, consumers may suffer a great deal of shrinking financial confidence. Therefore, consumer finance research should consider debt-management behavior by presenting different strategies than those used.

References

Bakker, A.B. and Oerlemans, W.G. (2019), "Daily job crafting and momentary work engagement: a self-determination and self-regulation perspective", *Journal of Vocational Behavior*, Vol. 112, pp. 417-430.

Bhagwan, P. (2019), "Empirical study on relationship between financial inclusion and financial literacy and its impact on consumer financial behaviour: a theoretical framework of unbanked people", *Journal of Commerce and Accounting Research*, Vol. 8 No. 1, pp. 61-67.

Birkenmaier, J. and Fu, Q.J. (2019), "Does consumer financial management behavior relate to their financial access?", *Journal of Consumer Policy*, Vol. 42 No. 3, pp. 333-348.

Botti, S. and McGill, A.L. (2006), "When choosing is not deciding: the effect of perceived responsibility on satisfaction", *Journal of Consumer Research*, Vol. 33 No. 2, pp. 211-219.

Carver, C.S. and White, T.L. (1994), “Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: the BIS/BAS scales”, *Journal of Personality and Social Psychology*, Vol. 67 No. 2, pp. 319-333.

Deci, E.L. and Ryan, R.M. (2000), “The ‘what’ and ‘why’ of goal pursuits: human needs and the self-determination of behavior”, *Psychological Inquiry*, Vol. 11 No. 4, pp. 227-268.

Deenanath, V., Danes, S.M. and Jang, J. (2019), “Purposive and unintentional family financial socialization, subjective financial knowledge, and financial behavior of high school students”, *Journal of Financial Counseling and Planning*, Vol. 30 No. 1, pp. 83-96.

Fishman, E.J. and Husman, J. (2017), “Extending attribution theory: considering students’ perceived control of the attribution process”, *Journal of Educational Psychology*, Vol. 109 No. 4, pp. 559-573.

FSA (2005), “Survey of maize-based retail products for mycotoxins”, Food Survey Information Sheet 72/05.

Gal, D. and McShane, B.B. (2012), “Can small victories help win the war? Evidence from consumer debt management”, *Journal of Marketing Research*, Vol. 49 No. 4, pp. 487-501.

Gilal, F.G., Chandani, K., Gilal, R.G., Gilal, N.G., Gilal, W.G. and Channa, N.A. (2020), “Towards a new model for green consumer behaviour: a self-determination theory perspective”, *Sustainable Development*, Vol. 28 No. 4, pp. 711-722.

Greenberg, A.E. and Hershfield, H.E. (2019), “Financial decision making”, *Consumer Psychology Review*, Vol. 2 No. 1, pp. 17-29.

Hadar, L., Sood, S. and Fox, C.R. (2013), “Subjective knowledge in consumer financial decisions”, *Journal of Marketing Research*, Vol. 50 No. 3, pp. 303-316.

Hansen, T. (2017), “The moderating effects of financial broad-scope trust on consumer knowledge, cognitive effort, and financial healthiness”, *Journal of Consumer Behaviour*, Vol. 16 No. 2, pp. 161-175.

Hilgert, M.A., Hogarth, J.M. and Beverly, S.G. (2003), “Household financial management: the connection between knowledge and behavior”, *Fed. Res. Bull*, Vol. 89, pp. 309-322.

Holt, A.D., Smedegaard, S., Pawlowski, C.S., Skovgaard, T. and Christiansen, L.B. (2019), “Pupils’ experiences of autonomy, competence and relatedness in ‘move for well-being in schools’: a physical activity intervention”, *European Physical Education Review*, Vol. 25 No. 3, pp. 640-658.

Hooper, D., Coughlan, J. and Mullen, M. (2008), “Structural equation modelling: guidelines for determining model fit”, *Articles*, Vol. 2.

Horwitz, E.J., Klontz, B.T. and Zabek, F. (2019), “A financial psychology intervention for increasing employee participation in and contribution to retirement plans: results of three trials”, *Journal of Financial Counseling and Planning*, Vol. 30 No. 2, pp. 262-276.

Hu, L.T. and Bentler, P.M. (1999), “Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives”, *Structural Equation Modeling: a Multidisciplinary Journal*, Vol. 6 No. 1, pp. 1-55.

Hudson, C., Heo, W., Park, H. and Palmer, L. (2017), “Employees’ financial behaviors following the 2007-2009 financial crisis”, *Financial Services Review*, Vol. 26 No. 1, pp. 19-36.

Kim, K.T. and Yuh, Y. (2018), “Financial knowledge and household saving: evidence from the survey of consumer finances”, *Family and Consumer Sciences Research Journal*, Vol. 47 No. 1, pp. 5-24.

Kim, J.I., Chung, M.K. and Dray, B.J. (2018), “Students’ relatedness needs in a teacher education course: the role of identities as learners and capital”, *Multicultural Education*, Vol. 25, pp. 29-36.

Kivetz, R. (2005), “Promotion reactance: the role of effort-reward congruity”, *Journal of Consumer Research*, Vol. 31 No. 4, pp. 725-736.

Lachance, M.J. (2012), “Young adults’ attitudes towards credit”, *International Journal of Consumer Studies*, Vol. 36 No. 5, pp. 539-548.

Lawson, D.R. and Klontz, B.T. (2017), “Integrating behavioral finance, financial psychology, and financial therapy into the 6-step financial planning process”, *Journal of Financial Planning*, Vol. 30 No. 7, pp. 48-55.

Lusardi, A. and Mitchell, O.S. (2007), “Baby boomer retirement security: the roles of planning, financial literacy, and housing wealth”, *Journal of Monetary Economics*, Vol. 54 No. 1, pp. 205-224.

Lusardi, A., Mitchell, O.S. and Curto, V. (2010), “Financial literacy among the young”, *Journal of Consumer Affairs*, Vol. 44 No. 2, pp. 358-380.

Martin, N., Kelly, N. and Terry, P. (2018), “A framework for self-determination in massive open online courses: design for autonomy, competence, and relatedness”, *Australasian Journal of Educational Technology*, Vol. 34 No. 2, pp. 35-55.

Mazher, W. (2020), “Do schools promote good coping skills for students with learning disabilities? A review of research from a self-determination perspective”, *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, Vol. 93 No. 6, pp. 306-317.

Menkhoff, L., Schmidt, U. and Brozynski, T. (2006), “The impact of experience on risk taking, overconfidence, and herding of fund managers: complementary survey evidence”, *European Economic Review*, Vol. 50 No. 7, pp. 1753-1766.

Oh, M.J. and Jung, J.C. (2018), “Does social exclusion cause people to make more donations?”, *The Journal of Asian Finance, Economics and Business*, Vol. 5 No. 2, pp. 129-137.

Parkinson, M. and Creswell, C. (2011), “Worry and problem-solving skills and beliefs in primary school children”, *British Journal of Clinical Psychology*, Vol. 50 No. 1, pp. 106-112.

Patrick, H. and Williams, G.C. (2012), “Self-determination theory: its application to health behavior and complementarity with motivational interviewing”, *International Journal of Behavioral Nutrition and Physical Activity*, Vol. 9 No. 1, p. 18.

Price, A. (2020), “Online gambling in the midst of COVID-19: a nexus of mental health concerns, substance use and financial stress”, *International Journal of Mental Health and Addiction*, pp. 1-18.

Reisch, L.A. and Zhao, M. (2017), “Behavioural economics, consumer behaviour and consumer policy: state of the art”, *Behavioural Public Policy*, Vol. 1 No. 2, pp. 190-206.

Ricciardi, V. (2008), “The psychology of risk: the behavioral finance perspective”, *Handbook of Finance*, John Wiley & Sons.

Ryan, R.M. and Deci, E.L. (2017), *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*, Guilford Publications.

Ryan, R.M. and Rigby, C.S. (2019), “Motivational foundations of game-based learning”, *Handbook of Game-Based Learning*, Mit Press, pp. 153-176.

Ryan, R.M., Connell, J.P. and Grolnick, W.S. (1992), “When achievement is not intrinsically motivated: a theory of internalization and self-regulation in school”, *Achievement and Motivation: A Social-Developmental Perspective*, Vol. 167 No. 88, pp. 167-188.

Schwarzenthal, M., Juang, L.P., Schachner, M.K., van de Vijver, F.J. and Handrick, A. (2017), “From tolerance to understanding: exploring the development of intercultural competence in multiethnic contexts from early to late adolescence”, *Journal of Community & Applied Social Psychology*, Vol. 27 No. 5, pp. 388-399.

Servon, L.J. and Kaestner, R. (2008), “Consumer financial literacy and the impact of online banking on the financial behavior of lower-income bank customers”, *Journal of Consumer Affairs*, Vol. 42 No. 2, pp. 271-305.

Sotiropoulos, V. and d’Astous, A. (2012), “Social networks and credit card overspending among young adult consumers”, *Journal of Consumer Affairs*, Vol. 46 No. 3, pp. 457-484.

Standage, M. and Ryan, R.M. (2020), “Self-determination theory in sport and exercise”, *Handbook of Sport Psychology*, John Wiley & Sons Inc, pp. 37-56.

Stavins, J. (2020), “Credit card debt and consumer payment choice: what can we learn from credit bureau data?”, *Journal of Financial Services Research*, Vol. 58 No. 1, pp. 1-32.

Szendrey, J. and Fiala, L. (2018), “‘I think I can get ahead!’ perceived economic mobility, income, and financial behaviors of young adults”, *Journal of Financial Counseling and Planning*, Vol. 29 No. 2, pp. 290-303.

Tang, N. and Baker, A. (2016), “Self-esteem, financial knowledge and financial behavior”, *Journal of Economic Psychology*, Vol. 54, pp. 164-176.

Tauber, S.K., Dunlosky, J., Urry, H.L. and Opitz, P.C. (2017), “The effects of emotion on younger and older adults’ monitoring of learning”, *Aging, Neuropsychology, and Cognition*, Vol. 24 No. 5, pp. 555-574.

Thelwall, M. and Wilson, P. (2016), “Does research with statistics have more impact? The citation rank advantage of structural equation modeling”, *Journal of the Association for Information Science and Technology*, Vol. 67 No. 5, pp. 1233-1244.

Vasconcellos, D., Parker, P.D., Hilland, T., Cinelli, R., Owen, K.B., Kapsal, N., Lee, J., Antczak, D., Ntoumanis, N., Ryan, R.M. and Lonsdale, C. (2020), “Self-determination theory applied to physical education: a systematic review and meta-analysis”, *Journal of Educational Psychology*, Vol. 112 No. 7, pp. 1444-1469.

Wagner, J. (2019), “Financial education and financial literacy by income and education groups”, *Journal of Financial Counseling and Planning*, Vol. 30 No. 1, pp. 132-141.

Williams, A.M. and Baláž, V. (2013), “Tourism, risk tolerance and competences: travel organization and tourism hazards”, *Tourism Management*, Vol. 35, pp. 209-221.

Zakaria, N.F. and Sabri, M.F. (2013), “Review of financial capability studies”, *Int. J. Humanities Soc. Sci*, Vol. 3 No. 9, pp. 197-203.

Zhang, W., Xu, F. and Sun, B. (2020), “Are open individuals more creative? The interaction effects of leadership factors on creativity”, *Personality and Individual Differences*, Vol. 163, pp. 1-7.

Further reading

Bagozzi, R.P. and Dholakia, U. (1999), “Goal setting and goal striving in consumer behavior”, *Journal of Marketing*, Vol. 63 No. 4_suppl1, pp. 19-32.

Botti, S. and Iyengar, S.S. (2006), “The dark side of choice: when choice impairs social welfare”, *Journal of Public Policy & Marketing*, Vol. 25 No. 1, pp. 24-38.

Cummings, C.A. (2017), “I can’t see you, you can’t see me: cyberbullying: an exploratory study examining this concept through the lens of the social bond theory”, *International Journal of Criminal and Forensic Science*, Vol. 1 No. 2, pp. 32-39.

Decharms, R. and Carpenter, V. (1968), “Measuring motivation in culturally disadvantaged school children”, *The Journal of Experimental Education*, Vol. 37 No. 1, pp. 31-41.

Deci, E.L. (1980), *The Psychology of Self-Determination*, Free Press.

Deci, E.L. and Ryan, R.M. (1986), “The dynamics of self-determination in personality and development”, *Self-Related Cognitions in Anxiety and Motivation*, pp. 171-194.

Dickinson, L. (1995), “Autonomy and motivation a literature review”, *System*, Vol. 23 No. 2, pp. 165-174.

Gross, J.J., Carstensen, L.L., Pasupathi, M., Tsai, J., Götestam Skorpen, C. and Hsu, A.Y. (1997), “Emotion and aging: experience, expression, and control”, *Psychology and Aging*, Vol. 12 No. 4, pp. 590-599.

Hair, J., William, B., Barry, B., Rolph, A. and Tatham, R. (2006), *Multivariate Data Analysis*, Vol. 6, Pearson Prentice Hall, Upper Saddle River, NJ.

Levesque, C., Zuehlke, A.N., Stanek, L.R. and Ryan, R.M. (2004), “Autonomy and competence in German and American university students: a comparative study based on self-determination theory”, *Journal of Educational Psychology*, Vol. 96 No. 1, pp. 68-84.

Lin, C.P., Tsai, Y.H. and Chiu, C.K. (2009), “Modeling customer loyalty from an integrative perspective of self-determination theory and expectation-confirmation theory”, *Journal of Business and Psychology*, Vol. 24 No. 3, pp. 315-326.

Marylène, G. and Deci, E.L. (2014), “The history of self-determination theory in psychology and management”, *The Oxford Handbook of Work Engagement, Motivation, and Self-Determination Theory*, Vol. 1, Oxford University Press.

Pirlott, A.G. and MacKinnon, D.P. (2016), “Design approaches to experimental mediation”, *Journal of Experimental Social Psychology*, Vol. 66, pp. 29-38.

Ryan, R.M. and Deci, E.L. (2000), “Intrinsic and extrinsic motivations: classic definitions and new directions”, *Contemporary Educational Psychology*, Vol. 25 No. 1, pp. 54-67.

Ryan, R.M. and Deci, E.L. (2004), “Autonomy is no illusion”, *Handbook of Experimental Existential Psychology*, Vol. 455.

Schwartz, L.A., Tuchman, L.K., Hobbie, W.L. and Ginsberg, J.P. (2011), “A social-ecological model of readiness for transition to adult-oriented care for adolescents and young adults with chronic health conditions”, *Child: care, Health and Development*, Vol. 37 No. 6, pp. 883-895.

Thomson, M. (2006), “Human brands: investigating antecedents to consumers’ strong attachments to celebrities”, *Journal of Marketing*, Vol. 70 No. 3, pp. 104-119.

Corresponding author

Heejung Park can be contacted at: hepark@nmu.edu

For instructions on how to order reprints of this article, please visit our website:
www.emeraldgrouppublishing.com/licensing/reprints.htm
Or contact us for further details: permissions@emeraldinsight.com

Reproduced with permission of copyright owner. Further reproduction prohibited without permission.