Journal of Global Business

VOLUME 7

11TH GLOBAL BUSINESS CONFERENCE
ST. SCHOLASTICA'S COLLEGE-MANILA
March 3, 2018

ONLINE JOURNAL
ISSN No. 2350-7179

JGB1116
Extending the model of social entrepreneurial intentions through PLS-SEM: The anteceding role of agreeableness and grit

Patrick Adriel H. Aure
De La Salle University
Patrick.aure@dlsu.edu.ph

Abstract

This paper built on the author's previous research on social entrepreneurial intention by using partial least squares structural equation modeling (PLS-SEM), which has the advantage of examining complex models holistically that multiple regression analysis cannot perform. Loosely anchored on the theory of planned behavior (TPB) and traditional entrepreneurial intention models, this research uncovered that the relationship of intentions with agreeableness and grit are mediated by perceived social entrepreneurial self-efficacy and perceived social support. As such, it is recommended for educators and policy-makers to develop initiatives that cultivate pro-social beliefs and values, as well as provide opportunities for applied group learning. For future research, social entrepreneurial intentions can be modeled through other lenses, such as the social cognitive theory (SCT) and a closer resemblance to the original TPB. Moreover, the current model can be extended by examining other background factors and variables beyond those advocated by TPB and SCT.

Keywords: *Social entrepreneurial intentions; theory of planned behavior; partial least squares structural equation modeling; grit; agreeableness*

Introduction

This paper extended the author's findings on social entrepreneurial intentions (SEI) in a Philippine business school (Aure, 2018) by exploring mediated relationships within variables through partial least squares structural equation modeling (PLS-SEM). The previous study (Aure, 2018) tested the SEI model (Hockerts, 2017; Mair & Noboa, 2006) that featured prior experience, empathy, moral obligation, self-efficacy, and perceived social support as the key predictors. Moreover, the Big Five personality traits and grit's relationship with SEI were explored as well. The following relationships were validated through multiple regression. First, grit, as an isolated independent variable, (Duckworth et al., 2007) was found to have a positive, but marginal, statistically significant relationship with SEI (p = .083). Second, in a model where Big Five personality traits (Baldasaro, Shanahan, & Bauer, 2013; Cooper, Smillie, & Corr, 2010; Donnellan, Oswald, Baird, & Lucas, 2006; Goldberg, 1992) were treated as the only predictors, agreeableness was found to have significant influence on SEI (p = .006). Third, a stepwise regression analysis revealed that prior experience (p < .001), self-efficacy (p < .001), and perceived social support (p = .041) are the best predictors of SEI.

However, the previous study's reliance on multiple regression limited the opportunity to holistically examine a complex model that contains multiple mediated relationships. In the theory of planned behavior (TPB) advanced by Ajzen (1991, 2015), he advocated that background factors, which includes personality traits and grit, do not have a direct relationship

with intentions. Rather, they are mediated by the TPB predictors—attitude towards behavior, norms, perceived internal behavioral control, and perceived internal behavioral control. In the study of Hockerts, Mair, and Noboa, empathy, moral obligation, self-efficacy, and perceived social support were used as respective proxies to the respective TPB predictors. The following figure describes the TPB and the relationship of background factors with intention.

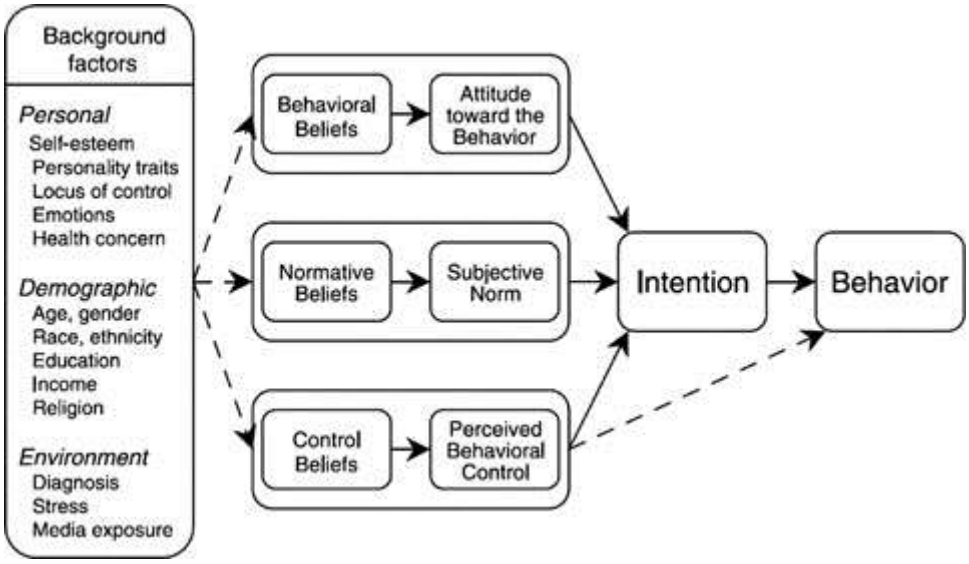

Figure 1. The theory of planned behavior (Ajzen, 1991; 2015)

Utilizing PLS-SEM surpasses the limitations of multiple regression in terms of analyzing multiple mediated relationships. Building on the results of the author's previous study, this paper grounded the conceptual model on the TPB with background factors. Therefore, this study examined the effects of agreeableness and grit as background factors intervened by empathy, moral obligation, self-efficacy, and perceived social support.

Given that social entrepreneurship is closely linked with the youth, which the Global Entrepreneurship Monitor characterizes as idealistic change agents between the age 18 and 34 years old (Bosma et al., 2015), and other studies focusing on business students (Ayob et al., 2013; Chipeta & Surujlal, 2016; Hockerts, 2017; İrengün & Arıkboğa, 2015; Prieto, 2011; Tiwari et al., 2017; Tran & Korflesch, 2016), this studied selected undergraduate business students in a private university, considered by the Philippines as one of the top business schools in the country. This paper explored the following research questions:

RQ1: What is the significance and extent of effect of the predictors—prior experience, empathy, moral obligation, self-efficacy, and perceived social support—on social entrepreneurial intent?

RQ2: What is the significance and extent of effect of agreeableness on social entrepreneurial intent, as mediated by the aforementioned predictors?

RQ3: What is the significance and extent of effect of grit on social entrepreneurial intent, as mediated by the aforementioned predictors?

Framework

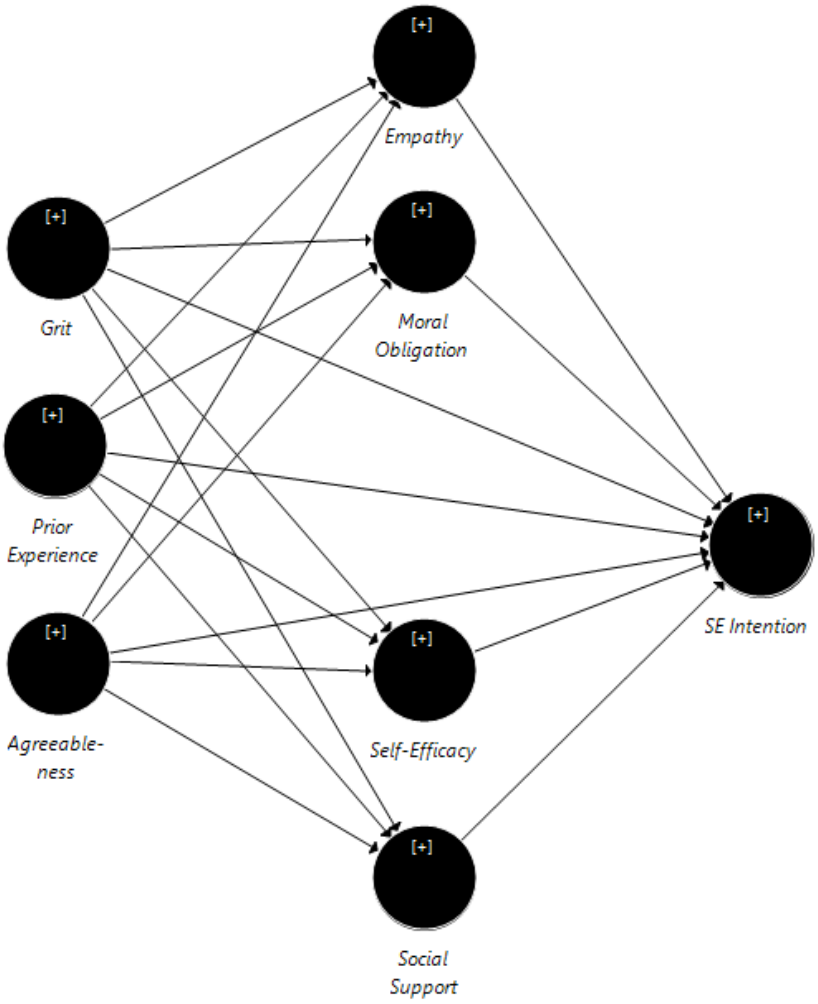

Figure 2. Conceptual Framework

The theory of planned behavior is the theoretical foundation for understanding intentions (Ajzen, 1991; 2015; Miles, 2012). The theory surmises that an individual's intentions best explain and predict one's behavior, with the following assumptions: (1) people behave in a systematic and rational manner; (2) actions are steered by conscious motives; and (3) individuals contemplate on the possible repercussions of actions before deciding to act.

The TPB has been adapted in various ways within the context of entrepreneurship (Kautonen, van Gelderen, & Fink, 2015; Liñán & Fayolle, 2015; Miles, 2012; Schlaegel & Koenig, 2014), as well as social entrepreneurial intentions (Ayob et al., 2013; Bacq, Hartog, & Hoogendoorn, 2016; Cavazos-Arroyo et al., 2016; Chipeta & Surujlal, 2016; Forster & Grichnik, 2013; Griffiths et al., 2013; Hockerts, 2015, 2017; Mair & Noboa, 2006; Politis et al., 2016; Prieto, Phipps, & Friedrich, 2012; Rantanen & Toikko, 2013; Smith & Woodworth, 2012; Tiwari et al., 2017; Urban & Teise, 2015; Yiu, Wan, Ng, Chen, & Su, 2014; Zeng et al., 2015). Mair and Noboa identified (1) empathy as a proxy for attitudes towards behavior, (2) moral judgement as a proxy for social norms, (3) self-efficacy as a proxy for internal behavioral control, and (4) perceived presence of social support as a proxy for external behavioral control.

Various researchers have also determined that personality, especially the Big Five dimensions (Baldasaro et al., 2013; Cooper et al., 2010; Donnellan et al., 2006; Goldberg, 1992), have an effect on commercial and social entrepreneurial intentions (Chlosta, Patzelt,

Klein, & Dormann, 2012; İrengün & Arıkboğa, 2015; Nga & Shamuganathan, 2010; Prieto, 2011; Wood, 2012). The findings of Aure (2018) revealed that agreeableness has the strongest statistically significant relationship with SEI. Grit, which encompasses "passion and perseverance for long-term goals" (Duckworth et al., 2007), is found to have a marginal statistically significant relationship with SEI as the study of Aure (2018) revealed. Therefore, it is interesting to find out the role of agreeableness and grit as background factors and examine them through PLS-SEM.

In the context of theory, a person's traits can serve as antecedents that indirectly affects a person's intention and subsequent behavior. Based on the studies of previous authors (Chlosta, Patzelt, Klein, & Dormann, 2012; İrengün & Arıkboğa, 2015; Nga & Shamuganathan, 2010; Prieto, 2011; Wood, 2012), it is sensible for agreeableness to positively influence SEI as this personality pertains to a person's warmness and overall positive outlook towards human nature in general. Previous authors have established both empirical and theoretical links between agreeableness and SEI, hence it is interesting to explore their relationships further. Other personality traits are also linked with SEI, such as openness to experience, conscientiousness, and extraversion, but the previous study of Aure (2018) did not empirically validate these contentions. Hence, these other personality traits were not included in this paper's structural equation modelling.

A look into traditional and social entrepreneurship literature suggests that potential entrepreneurs should possess traits that allow them to persist despite setbacks, which resembles what grit intends to measure. In addition, Duckworth et al. (2007) discovered that grit is linked with personality, especially conscientiousness, although psychometric validations showed that grit measures different characteristics compared those measured by personality traits. Therefore, it is noteworthy to examine if grit has an indirect effect on SEI.

Hockerts found out that prior experience has a significant positive influence on social entrepreneurial intent. Furthermore, Hockerts also examined that the relationship between prior experience and social entrepreneurial intentions can be mediated by empathy, moral obligation, self-efficacy, and perceived social support.

H1-1a: Prior experience has a significant positive influence on social entrepreneurial intent.
H1-1b: Prior experience has a significant positive influence on empathy.
H1-1c: Prior experience has a significant positive influence on moral obligation.
H1-1d: Prior experience has a significant positive influence on self-efficacy.
H1-1e: Prior experience has a significant positive influence on perceived social support.

The theory of Mair and Noboa, as tested by Hockerts, posits that empathy, defined as an emotional response of concern and concern caused by seeing someone else in need, has a positive relationship with social entrepreneurial intentions.

H1-2: Empathy has a significant positive influence on social entrepreneurial intent.

The theory of Mair and Noboa, as tested by Hockerts, posits that moral obligation, characterized by the perception that societal norms imply a responsibility to help marginalized people, has a positive relationship with social entrepreneurial intentions.

H1-3: Moral obligation has a significant positive influence on social entrepreneurial intent.

The theory of Mair and Noboa, as tested by Hockerts, posits that social entrepreneurial self-efficacy, characterized by a person's belief that individuals can contribute towards solving societal problems, has a positive relationship with social entrepreneurial intentions.

H1-4: Self-efficacy has a significant positive influence on social entrepreneurial intent.

The theory of Mair and Noboa, as tested by Hockerts, posits that perceived social support, characterized by the perceived support an individual expects to receive from her or his surrounding (for example, support of networks, prospect investors), has a positive relationship with social entrepreneurial intentions.

H1-5: Perceived social support has a significant positive influence on social entrepreneurial intent.

The findings of Aure (2018) showed that among the Big Five personality traits, agreeableness has the strongest statistically significant relationship with intentions. However, when agreeableness and the aforementioned predictors are regressed using a forced-entry model, agreeableness lost its predictive power. Moreover, Ajzen (1991; 2015) suggested that in accordance with TPB, personality and a person's characteristics should be considered as background factors mediated by TPB variables.

H2-1. Agreeableness, mediated by empathy, has a significant positive influence on social entrepreneurial intent.
H2-2. Agreeableness, mediated by moral obligation, has a significant positive influence on social entrepreneurial intent.
H2-3. Agreeableness, mediated by self-efficacy, has a significant positive influence on social entrepreneurial intent.
H2-4. Agreeableness, mediated by perceived social support, has a significant positive influence on social entrepreneurial intent.

The study of Aure (2018) also revealed that grit has a marginal statistically significant relationship with intentions. However, similar to agreeableness, placing grit together with the aforementioned predictors caused grit to lose its predictive power. In accordance to the suggestion of Ajzen (1991; 2015), since grit is a personal characteristic, it should be considered as a background factor mediated by TPB variables.

H3-1. Grit, mediated by empathy, has a significant positive influence on social entrepreneurial intent.
H3-2. Grit, mediated by moral obligation, has a significant positive influence on social entrepreneurial intent.
H3-3. Grit, mediated by self-efficacy, has a significant positive influence on social entrepreneurial intent.
H3-4. Grit, mediated by perceived social support, has a significant positive influence on social entrepreneurial intent.

Methodology

Re-examining the data explored by Aure (2018), this study is set in a Philippines private business college, which is perceived as one of the best business schools in the country and a signatory of the Principles of Responsible Management Education (PRME) advocated by the

United Nations. The university aims to develop future business leaders that can reconcile making profits with serving society, especially the poor and marginalized. The university is a potential breeding ground of future social entrepreneurs and is ripe for a study exploring what drives its business students' social entrepreneurial intentions.

The research design of Aure (2018) primarily used the survey method, featuring established questions from various authors (Donnellan et al., 2006; Duckworth et al., 2007; Hockerts, 2017). The Likert scales used ranged from 1 (strongly disagree) to 5 (strongly agree). As a tool for analysis, partial least squares structural equation modeling was employed as recommended by Hair et al. (2014) and Lowry and Gaskin (2014). PLS-SEM is recommended when the data does not follow a normal distribution and when the relationships contain multiple mediating relationships (Lowry & Gaskin, 2014).

The sample size was computed based on the recommendations of Hair et al. (2014, p. 21). With the maximum number of arrows pointing at a construct (in this case, social entrepreneurial intentions) equaling to 7, setting the significance level to .05, a statistical power of 80%, and minimum R^2 of .25, the recommended minimum sample size is 80. The study of Aure (2018) was able to collect data from 137 respondents, which is well beyond the recommended minimum.

The data was gathered through Google Forms. This research utilized purposive sampling, targeting undergraduate business students of a private business school with the age 17-22. Furthermore, the reports of the Global Entrepreneurship Monitor associate social entrepreneurship with young changemakers (Bosma et al., 2015), which is aligned to why undergraduate business students should be studied. Undergraduate students are one of the most important stakeholders in terms of understanding predisposition to social entrepreneurial initiatives, given how educators and policy-makers can design programs for their learning. Moreover, undergraduate students are those who are looking for career opportunities—showing how understanding their intentions are critical for unearthing insights (Ayob et al., 2013; Chipeta & Surujlal, 2016; İrengün & Arıkboğa, 2015; Prieto, 2011; Tiwari et al., 2017).

To perform PLS-SEM, the SmartPLS 3.0 (Ringle et al., 2015) software was utilized. All latent variables were considered to have reflective indicators. Factor analyses, tests of construct validity and reliability, tests for discriminant validity, tests for multicollinearity, and model fit were all performed in SmartPLS 3.0, as guided by Hair et al. (2014) and Lowry and Gaskin (2014). The usual PLS algorithm method and bootstrapping (J = 5,000) were employed as suggested by Ringle et al. (2015). As recommended by Kock (2014), this study utilized one-tailed p-value tests of significance since the a priori hypotheses inferred on the direction and signs of the variables relationships, which is backed by the prior research of Hockerts (2017).

Discussion of Results

A total of 137 respondents answered the survey of Aure (2018), which was distributed via Google Forms. Majority of the respondents are aged 17-19 years old and are freshmen and sophomore business undergraduate students. More than half of the individuals surveyed are females.

Table 1
Cross-tabulation of Age and Gender

Age / Gender	Female	Male	Grand Total
17	26	11	37
18	43	31	74
19	14	9	23
20	1	2	3
Grand Total	84	53	137

All in all, this study examined eight latent variables—one outcome, which is social entrepreneurial intentions, and seven predictors. The variables were measured through various questions established by various researchers. Agreeableness questions were lifted from the Mini-IPIP (Donnellan et al., 2006). Grit questions came from the scale advanced by Duckworth et al. (2007). Scales about the prior experience, empathy, moral obligation, self-efficacy, and social support were sourced from the study of Hockerts (2017). The following table shows the statistics used to assess the construct reliability and validity of the variables in the model. The values indicate acceptable levels of Cronbach's alpha and composite reliability which is $a > 0.60$ (Lowry & Gaskin, 2014).

Table 2
Construct Reliability and Validity

Latent Variable	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Agreeableness	0.675	0.824	0.613
Empathy	0.785	0.874	0.697
Grit	0.689	0.803	0.506
Intention	0.764	0.864	0.680
Moral Obligation	0.866	0.909	0.713
Prior Experience	0.673	0.818	0.600
Self-Efficacy	0.753	0.859	0.670
Social Support	0.846	0.908	0.768

To assess discriminant validity, cross-loadings of the questions were examined through exploratory factor analysis conducted in PLS-SEM. Indicators or questions pertaining to grit and agreeableness were removed until cross-loadings were deemed acceptable. Lowry and Gaskin (2014) proposed that the difference between the main values and cross-loaded values should not exceed 0.20. The final cross-loadings matrix showed that there is no significant cross-loadings of the indicators on other latent variables.

To test for multicollinearity, it is essential to look at variance inflation factors of the indicators (VIF). All VIFs were less than 10.00, hence there was no significant multicollinearity among the indicators. The following table shows the cross-loadings and variance inflation factors of the indicators.

Table 3
Discriminant Validity and Test for Multicollinearity

Indicators	Cross-loadings								VIF
	Agreeableness	Empa-thy	Grit	Intent-ion	Moral Obligation	Prior Experience	Self-Efficacy	Social Support	
Grit1	0.215	0.186	**0.743**	0.225	0.366	0.197	0.335	0.316	1.174

Grit6	0.096	0.142	**0.701**	0.141	0.146	0.120	0.187	0.107	1.229
Grit9	0.027	0.028	**0.616**	0.102	0.244	0.138	0.208	0.097	1.653
Grit12	0.206	0.286	**0.777**	0.278	0.204	0.199	0.240	0.275	1.674
Agree1	**0.873**	0.488	0.147	0.187	0.279	0.091	0.361	0.344	1.749
Agree3	**0.812**	0.420	0.209	0.243	0.206	0.179	0.294	0.257	1.650
Agree4	**0.647**	0.306	0.166	0.234	0.264	0.195	0.301	0.222	1.139
Emp1	0.480	**0.811**	0.231	0.407	0.410	0.236	0.442	0.395	1.393
Emp2	0.369	**0.822**	0.124	0.279	0.425	0.171	0.419	0.318	1.933
Emp3	0.446	**0.871**	0.248	0.416	0.604	0.213	0.540	0.455	2.001
PriorExp 1	0.287	0.297	0.307	0.318	0.253	**0.765**	0.327	0.291	1.159
PriorExp 2	0.048	0.171	0.079	0.352	0.145	**0.794**	0.126	0.249	1.579
PriorExp 3	0.063	0.085	0.133	0.352	0.081	**0.764**	0.196	0.298	1.512
SEIntent 1	0.227	0.479	0.298	**0.888**	0.415	0.357	0.568	0.535	1.902
SEIntent 2	0.230	0.322	0.143	**0.786**	0.325	0.447	0.455	0.440	1.432
SEIntent 3	0.234	0.291	0.254	**0.796**	0.157	0.275	0.494	0.303	1.611
MoralObli1	0.313	0.518	0.314	0.369	**0.836**	0.221	0.521	0.328	1.989
MoralObli2	0.197	0.477	0.301	0.317	**0.867**	0.197	0.474	0.375	2.440
MoralObli3	0.284	0.520	0.300	0.301	**0.848**	0.163	0.526	0.299	2.220
MoralObli4	0.274	0.432	0.286	0.263	**0.827**	0.147	0.548	0.359	2.221
SelfEff1	0.390	0.533	0.357	0.531	0.527	0.282	**0.874**	0.505	1.757
SelfEff2	0.284	0.334	0.279	0.497	0.380	0.178	**0.777**	0.464	1.415
SelfEff3	0.321	0.508	0.231	0.482	0.596	0.254	**0.802**	0.443	1.533
Support1	0.302	0.401	0.256	0.488	0.345	0.349	0.542	**0.916**	3.988
Support2	0.285	0.383	0.268	0.440	0.309	0.324	0.457	**0.915**	4.027
Support3	0.346	0.460	0.308	0.450	0.400	0.277	0.509	**0.792**	1.455

To further assess discriminant validity, it is also important to satisfy the Fornell-Larcker criterion, wherein the square root of the average variance extracted (AVE) of each latent variable should be higher than their respective correlation coefficients with other latent variables. The following table shows that the Fornell-Larcker criterion is satisfied by the model.

Table 4

Fornell-Larcker Criterion

	Agreeable-ness	**Empa-thy**	**Grit**	**Intent-ion**	**Moral Obligation**	**Prior Experience**	**Self-Efficacy**	**Social Support**
Agreeableness	0.783							
Empathy	0.524	0.835						
Grit	0.220	0.250	0.712					
Intention	0.278	0.450	0.284	0.825				
Moral Obligation	0.319	0.579	0.356	0.374	0.844			
Prior Experience	0.191	0.252	0.240	0.438	0.218	0.775		

Self-Efficacy	0.409	0.564	0.357	0.615	0.613	0.293	0.819	
Social Support	0.356	0.474	0.317	0.526	0.402	0.363	0.576	0.876

Since the tests for reliability, validity, and multicollinearity were satisfied, the structural model and its paths can be analyzed with greater confidence. The following table features path estimates and p-values, which was the result of the PLS algorithm and bootstrapping (*J = 5,000)* procedure performed through SmartPLS 3.0, as recommended by Hair et al. (2014) and Lowry and Gaskin (2014).

Table 5
Results of the PLS Algorithm and Bootstrapping

Paths	Original Sample	Sample Mean	Standard Deviation	*t* Statistics	*p* Values
Agreeableness → Empathy	0.474	0.478	0.073	6.445	***0.000***
Agreeableness → Intention	0.055	0.053	0.084	0.660	0.255
Agreeableness → Moral Obligation	0.238	0.241	0.097	2.439	***0.007***
Agreeableness → Self-Efficacy	0.322	0.324	0.085	3.776	***0.000***
Agreeableness → Social Support	0.262	0.265	0.070	3.742	***0.000***
Empathy → Intention	0.134	0.140	0.097	1.380	*0.084*
Grit → Empathy	0.113	0.122	0.082	1.386	*0.083*
Grit →Intention	0.025	0.028	0.077	0.325	0.373
Grit → Moral Obligation	0.279	0.294	0.087	3.208	***0.001***
Grit → Self-Efficacy	0.245	0.258	0.074	3.310	***0.000***
Grit → Social Support	0.195	0.205	0.077	2.528	***0.006***
Moral Obligation → Intention	-0.083	-0.089	0.108	0.766	0.222
Prior Experience → Empathy	0.135	0.135	0.087	1.539	*0.062*
Prior Experience → Intention	0.236	0.230	0.074	3.206	***0.001***
Prior Experience → Moral Obligation	0.106	0.105	0.099	1.064	0.144
Prior Experience → Self-Efficacy	0.173	0.175	0.091	1.915	***0.028***
Prior Experience → Social Support	0.266	0.265	0.089	3.002	***0.001***
Self-Efficacy → Intention	0.436	0.438	0.091	4.772	***0.000***
Social Support → Intention	0.170	0.171	0.089	1.914	***0.028***

The first set of hypotheses (H1) tested the findings of Hockerts (2017). The results of the path analysis revealed that prior experience has a statistically significant positive influence on self-efficacy, social support, and intention. It has a marginal statistically significant influence on empathy, but not on moral obligation. Self-efficacy and perceived social support has a statistically significant positive influence on intentions, as expected. However, empathy only has marginal statistically significant relationship with intention, while moral obligation failed to predict intention. In this case, only self-efficacy and social support partially mediated the relationship between prior experience and intention. As such, the results of the PLS algorithm and bootstrapping only partially validated the findings of Hockerts.

The second set of hypotheses (H2) tested the relationship of agreeableness with empathy, moral obligation, self-efficacy, social support, and intention. The results of the tests revealed that agreeableness positively influenced all the aforementioned predictors, but did not have statistically significant relationship with intention itself. A look at the total indirect effect of agreeableness on intention revealed a statistically significant relationship ($p < .001$) with a coefficient of 0.229. As such, self-efficacy and social support fully mediated the relationship

between agreeableness and intention.

The third set of hypotheses (H3) tested the relationship of grit with empathy, moral obligation, self-efficacy, social support, and intention. The results of the tests revealed that grit positively influenced moral obligation, self-efficacy, and social support with statistical significance. Grit only has a marginal statistically significant relationship with empathy, and grit did not influence intention directly. A look at the total indirect effect of grit on intention revealed a statistically significant relationship (p = .004) with a coefficient of 0.132. As such, self-efficacy and social support fully mediated the relationship between agreeableness and intention.

The r-squared values of the model showed that the other latent variables explained 45.5% of the variance in social entrepreneurial intentions, which is acceptable in field of social science (Lowry & Gaskin, 2014). The r-squared values for the other endogenous variables, which served as mediators of prior experience, grit, and agreeableness, are shown in the following table.

Table 6
R-Squared Values from the PLS Algorithm

Endogenous Variables	R Square	R Square Adjusted
Empathy	0.310	0.295
Intention	0.483	0.455
Moral Obligation	0.198	0.180
Self-Efficacy	0.270	0.253
Social Support	0.252	0.235

It is also important to assess effect sizes beyond the significance of path estimates in the structural model. An effect size, or f-squared value greater than 0.10, is advocated (Hair et al., 2014; Lowry & Gaskin, 2014; Ringle et al., 2015). The following table reveals that the most significant effect sizes pertained to the positive influence of agreeableness with empathy, as well as the influence of self-efficacy on social entrepreneurial intention.

Table 7
F-Squared Values from the PLS Algorithm

Latent Variables	Empathy	Intention	Moral Obligation	Self-Efficacy	Social Support
Agreeableness	***0.303***	0.004	0.066	0.132	0.086
Empathy		0.017			
Grit	0.017	0.001	0.088	0.075	0.046
Intention					
Moral Obligation		0.007			
Prior Experience	0.024	0.091	0.013	0.038	0.087
Self-Efficacy		***0.169***			
Social Support		0.033			

In analyzing structural models, it is necessary to examine model fit. However, Ringle et al. (2015) cautioned that PLS-SEM is primarily suited for prediction. They note that model fit assessment may not be very useful for PLS-SEM, and the criteria included in their SmartPLS

software are in the early stages of research. Nevertheless, the essential values to look at are the following: (1) standardized root mean square residual (SRMR), which Ringle et al. suggested to be below 0.10; (2) normed fit index (NFI), which is suggested to be above 0.90; and (3) root mean squared residual covariance matrix of the outer model residuals (RMS Theta), which is suggested to be below 0.12. The values of the saturated model are revealed as follows: SRMR = 0.083, NFI = 0.651, and RMS Theta = 0.177. These values indicate that overall, the model fit could be improved.

Conclusions, Limitations and Recommendations for future research

Similar to the regression analysis findings of Aure (2018), the PLS-SEM analysis of the first research question revealed that prior experience, self-efficacy, and perceived social support are the statistically significant predictors of social entrepreneurial intentions, with self-efficacy and social support partially mediating the relationship of prior experience and intentions.

The succeeding research questions and hypotheses explored the role of grit and agreeableness as background factors that affected intentions through mediators. Both agreeableness and grit were fully mediated by self-efficacy and perceived social support in terms of their relationship with social entrepreneurial intention. These are new findings that the regression analysis of Aure (2018) were not able to uncover. In the context of relating this study to the extended theory of planned behavior, agreeableness and grit were discovered to be background factors that influence social entrepreneurial intentions.

Policy-makers and academic institutions can design development programs that expose students to managing and jumpstarting social enterprises side-by-side with mentorship, group learning, and learn-by-doing mechanisms. For future research, other theories (for example, adopting a social cognitive career-oriented theory for student respondents) and variables that extend understanding of social entrepreneurial intentions are crucial. Other background factors may be explored to have a better appreciation of the model. In addition, future researchers may want to attempt a closer resemblance to the scale development advocated by Ajzen, given the inadequacy of empathy and moral obligation as predictors of social entrepreneurial intention. A closer look at the original theory of planned behavior revealed that the scales for attitudes towards behavior and subjective norms are more directly pointed at the intended behavior itself. On the other hand, empathy and moral obligation do not directly describe attitudes and norms towards social entrepreneurial behavior, but rather, they point at beliefs and norms on the marginalized and promote social justice. Perhaps empathy and moral obligation may be considered as *beliefs* that lead to attitude and subjective norms, rather than proxies or replacements for these main behavioral predictors.

The following are recommended to the relevant stakeholders:

1. Social entrepreneurship scholars. Continue to extend the model of social entrepreneurial intentions by revisiting other theories apart from the theory of planned behavior. Future studies can include social cognition career theory, and exploring the effect of demographics, peers, and family in shaping social entrepreneurial intentions.
2. Social entrepreneurs. An ecosystem of support is vital not only to existing changemakers, but also nascent social entrepreneurs. An ecosystem of support must allow changemakers to build their own skills together with peers so that they will be

encouraged to start their own social enterprises. This is evidenced by the regression analysis of Aure (2018) and the PLS-SEM analysis of this research, wherein social support has a positive influence on intentions.

3. Aspiring social entrepreneurs. Be involved in activities that expose one's self to social entrepreneurial activities, such as designing enterprises for beneficiaries, learning with peers, and searching for mentors for guidance. This is evidenced by the regression analysis of Aure (2018) and the PLS-SEM analysis of this research, wherein self-efficacy has a positive influence on intentions.
4. Policy makers. Design policies, programs, and even social enterprise competitions that promote not only idea pitches, but rather collaboration among participants. Demonstrate that there is support for nascent social entrepreneurs eager to take the next step.
5. Educators. Design curriculum and activities that better predispose students towards a pro-social orientation, group learning, and exposure to read social problems. As discovered by this research through PLS-SEM analysis, educators may want to cultivate environments that foster agreeableness and grit to further predispose students towards social entrepreneurial behavior.
6. Academic institutions. Colleges and universities can serve as a breeding ground of future social entrepreneurs by allocating funding to social enterprise related activities that foster group problem-solving. This is evidenced by the regression analysis of Aure (2018) and the PLS-SEM analysis of this research, wherein self-efficacy and social support have positive influence on intentions.
7. Traditional businesses. For corporate social responsibility to be actualized, adopting a social entrepreneurial mindset is vital for corporate leaders and even a traditional business's managers. Group pro-bono work is encouraged as it allows employees to build their own self-efficacy, have a good perception of their peers doing social-oriented work, and building experience towards authentic corporate social entrepreneurship. Again, this is evidenced by the regression analysis of Aure (2018) and the PLS-SEM analysis of this research.

References

Ajzen, I. (2015). Consumer attitudes and behavior: The theory of planned behavior applied to food consumption decisions. *Rivivista Di Economia Agraria*, *2*(70), 121–138. https://doi.org/10.13128/REA-18003

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Aure, P. H. (2018). What drives social entrepreneurial intentions? A look into the theory of planned behavior, personality, and grit. In *Proceedings of the 3rd International Conference on Entrepreneurship*. Bangkok, Thailand: Entrepreneurship Educators Association of the Philippines.

Ayob, N., Yap, C. S., Sapuan, D. A., & Rashid, M. Z. A. (2013). Social entrepreneurial intention among business undergraduates: An emerging economy perspective. *Gadjah Mada International Journal of Business*, *15*(3), 249–267. https://doi.org/10.22146/gamaijb.5470

Bacq, S., Hartog, C., & Hoogendoorn, B. (2016). Beyond the moral portrayal of social entrepreneurs : An empirical approach to who they are and what drives them. *Journal of Business Ethics*, *133*, 703–718. https://doi.org/10.1007/s10551-014-2446-7

Baldasaro, R. E., Shanahan, M. J., & Bauer, D. J. (2013). Psychometric properties of the Mini-IPIP in a large, nationally representative sample of young adults. *Journal of Personality Assessment*, *95*(1), 74–84. https://doi.org/10.1080/00223891.2012.700466

Bosma, N., Schott, T., Terjesen, S., & Kew, P. (2015). *Global Entrepreneurship Monitor 2015 to 2016: Special topic report on social entrepreneurship*. *GEM (Global Entrepreneurship Monitor)*. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2786949

Cavazos-Arroyo, J., Puente-Diaz, R., & Agarwal, N. (2016). An examination of certain antecedents of social entrepreneurial intentions among Mexico residents. *Review of Business Management*, *19*(64), 180–199. https://doi.org/10.7819/rbgn.v19i64.3129

Chipeta, E. M., & Surujlal, J. (2016). Influence of Gender and Age on Social Entrepreneurship Intentions among University Students in Gauteng Province, South Africa. *Gender & Behaviour*, *14*(1), 6885–6899.

Chlosta, S., Patzelt, H., Klein, S. B., & Dormann, C. (2012). Parental role models and the decision to become self-employed: The moderating effect of personality. *Small Business Economics*, *38*(1), 121–138. https://doi.org/10.1007/s11187-010-9270-y

Cooper, A. J., Smillie, L. D., & Corr, P. J. (2010). A confirmatory factor analysis of the Mini-IPIP five-factor model personality scale. *Personality and Individual Differences*, *48*(5), 688–691. https://doi.org/10.1016/j.paid.2010.01.004

Donnellan, M. B., Oswald, F. L., Baird, B. M., & Lucas, R. E. (2006). The mini-IPIP scales: tiny-yet-effective measures of the Big Five factors of personality. *Psychological Assessment*, *18*(2), 192–203. https://doi.org/10.1037/1040-3590.18.2.192

Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, *92*(6), 1087–1101. https://doi.org/10.1037/0022-3514.92.6.1087

Forster, F., & Grichnik, D. (2013). Social entrepreneurial intention formation of corporate volunteers. *Journal of Social Entrepreneurship*, *4*(2), 153–181. https://doi.org/10.1080/19420676.2013.777358

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, *4*(1), 26–42.

Griffiths, M. D., Gundry, L. K., & Kickul, J. R. (2013). The socio-political, economic, and cultural determinants of social entrepreneurship activity: An empirical examination. *Journal of Small Business and Enterprise Development*, *20*(2), 341–357. https://doi.org/10.1108/14626001311326761

Hair, J. F. J., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014). *A primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks, California: Sage Publications, Inc. https://doi.org/10.1016/j.lrp.2013.01.002

Hockerts, K. (2015). The Social Entrepreneurial Antecedents Scale (SEAS): A validation study. *Social Enterprise Journal*, *11*(3), 260–280. https://doi.org/10.1108/SEJ-05-2014-0026

Hockerts, K. (2017). Determinants of social entrepreneurial intentions. *Entrepreneurship Theory and Practice*, *41*(1), 105–130. https://doi.org/10.1111/etap.12171

İrengün, O., & Arıkboğa, Ş. (2015). The Effect of Personality Traits on Social Entrepreneurship Intentions: A Field Research. *Procedia - Social and Behavioral Sciences*, *195*, 1186–1195. https://doi.org/10.1016/j.sbspro.2015.06.172

Kautonen, T., van Gelderen, M., & Fink, M. (2015). Robustness of the theory of planned behavior in predicting entrepreneurial intentions and actions. *Entrepreneurship Theory and Practice*, *39*(3), 655–674. https://doi.org/10.1111/etap.12056

Kock, N. (2014). *One-tailed or two-tailed P values in PLS-SEM*. Laredo, Texas: ScriptWarp Systems. https://doi.org/10.13140/2.1.3788.1929

Liñán, F., & Fayolle, A. (2015). A systematic literature review on entrepreneurial intentions: Citation, thematic analyses, and research agenda. *International Entrepreneurship and Management Journal*, *11*, 907–933. https://doi.org/10.1007/s11365-015-0356-5

Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. *IEEE Transactions on Professional Communication*, *57*(2), 123–146. https://doi.org/10.1109/TPC.2014.2312452

Mair, J., & Noboa, E. (2006). Social entrepreneurship: How intentions to create a social venture are formed. In J. Mair, J. Robinson, & K. Hockerts (Eds.), *Social entrepreneurship* (pp. 121–135). United Kingdom: Palgrave Macmillan. https://doi.org/10.1057/9780230625655

Mair, J., Robinson, J., & Hockerts, K. (2006). *Social entrepreneurship*. (J. Mair, J. Robinson, & K. Hockerts, Eds.), *Social entrepreneurship*. New York: Palgrave Macmillan. https://doi.org/10.1057/9780230625655

Miles, J. A. (2012). *Management and Organization Theory* (1st ed.). San Francisco, CA: Jossey-Bass.

Nga, J. K. H., & Shamuganathan, G. (2010). The influence of personality traits and demographic factors on social entrepreneurship start up intentions. *Journal of Business Ethics*, *95*(2), 259–282. https://doi.org/10.1007/s10551-009-0358-8

Politis, K., Ketikidis, P., & Diamantidis, A. D. (2016). An investigation of social entrepreneurial intentions formation among South-East European postgraduate students. *Journal of Small Business and Enterprise Development*, *23*(4), 1120–1141. https://doi.org/10.1108/JSBED-03-2016-0047

Prieto, L. C. (2011). The influence of proactive personality on social entrepreneurial intentions among African-American and Hispanic undergraduate students: The moderating role of hope. *Academy of Entrepreneurship Journal*, *17*(2), 77–97.

Prieto, L. C., Phipps, S. T. A., & Friedrich, T. L. (2012). Social entrepreneur development: An integration of critical pedagogy, the theory of planned behavior, and the ACS model. *Academy of Entrepreneurship Journal*, *18*(2), 1–16.

Rantanen, T., & Toikko, T. (2013). Social values, societal entrepreneurship attitudes and entrepreneurial intention of young people in the Finnish welfare state. *Poznan University of Economics Review*, *13*(1), 7–25.

Ringle, C., Wende, S., & Becker, J.-M. (2015). SmartPLS 3. Boenningstedt: SmartPLS GmbH. Retrieved from http://www.smartpls.com

Schlaegel, C., & Koenig, M. (2014). Determinants of entrepreneurial intent: A meta-analytic test and integration of competing models. *Entrepreneurship Theory and Practice*, *38*(2), 291–332. https://doi.org/10.1111/etap.12087

Smith, I. H., & Woodworth, W. P. (2012). Developing social entrepreneurs and social innovators: A social identity and self-efficacy approach. *Academy of Management Learning & Education*, *11*(3), 390–407.

Tiwari, P., Bhat, A. K., & Tikoria, J. (2017). An empirical analysis of the factors affecting social entrepreneurial intentions. *Journal of Global Entrepreneurship Research*, *7*(1), 9. https://doi.org/10.1186/s40497-017-0067-1

Tran, T. P., & Korflesch, H. Von. (2016). A conceptual model of social entrepreneurial intention based on the social cognitive career theory. *Asia Pacific Journal of Innovation and Entrepreneurship*, *10*(1), 17–38. https://doi.org/10.1108/APJIE-12-2016-007

Urban, B., & Teise, H. (2015). Antecedents to social entrepreneurship intentions : An empirical study in South Africa. *Management Dynamics*, *24*(2), 36–53.

Wood, S. (2012). Prone to progress: Using personality to identify supporters of innovative social entrepreneurship. *Journal of Public Policy & Marketing*, *31*(1), 129–141. https://doi.org/10.1509/jppm.11.060

Yiu, D. W., Wan, W. P., Ng, F. W., Chen, X., & Su, J. (2014). Sentimental drivers of social entrepreneurship: A study of China's Guangcai (Glorious) program. *Management and Organization Review*, *10*(1), 55–80. https://doi.org/10.1111/more.12043

Zeng, F. Q., Zheng, M. Q., & Lee, D. (2015). An Empirical Study on the Influencing Factors of University Students' Entrepreneurial Intention – A Research Based on the Chinese Nascent Social Entrepreneur. *Journal of Asia Entrepreneurship and Sustainability*, *11*(1), 89–126.