

## Appreciative joy, nostalgia and prosocial behavior: a different approach on mental wellbeing maintenance

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### ABSTRACT

The effect of maintaining mental wellbeing by conducting prosocial behavior has been established for quite some time and is supported by many theories. Nevertheless, prosocial behavior might not easily be done by individuals with negative feelings due to certain emotional burdens. The current study examined the mediating effect of appreciative joy in the relationship between nostalgia and prosocial behavior. There were 123 undergraduate students with an average age of 21.2 years old recruited from a Malaysian private university using the purposive sampling method. Employing an experimental single-factor independent design; the experiment was conducted online. Multiple regression analysis showed that only the relationship between appreciative joy and prosocial behavior is statistically significant in this study, without being mediated by appreciative joy. In conclusion, nostalgia did not significantly inflict any appreciative joy that eventually drove people to conduct any prosocial behavior. Further implications and suggestions are discussed.

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## 1. INTRODUCTION

Emotion has the potential to influence our behavior which could essentially be an important factor in maintaining positive social interactions [1], [2]. An example of emotion could be nostalgia, as it is associated with approach motivation to perform a behavior [3], [4]. A behavior that points towards positive social interactions could be prosocial. Prosocial behavior has several implications for society as it could contribute to more peaceful coexistence among individuals [5]. A behavior that is greatly appreciated in society as it contributes to social well-being and preventions of disruptive behavior like harming one another [6], [7] making it is quite difficult to imagine life without pro-sociality [8]. Ironically, humans as social creatures may sometimes find difficulties in making a personal sacrifice for the sake of others [9]. Which makes it important to promote prosocial behavior, at the same time preventing potential violence and other negative consequences caused by lack of pro-sociality [6]. To enhance prosocial behavior, nostalgia could be an efficacious emotion in doing so [10]. Because charitable giving is a kind of prosocial behavior that could be resulted from nostalgia [11], [12]. Alternatively, appreciative joy being an emotion that is related to prosocial intentions could lead to prosocial behavior as well [13].

However, generally, there is a lack of research on the variables mentioned; to the knowledge of the author, there is no research done on the mediating role of appreciative joy in the relationship between

nostalgia and prosocial behavior. Especially on the relationship between appreciative joy and prosocial behavior has yet to be investigated. Studies regarding appreciative joy are still in their beginnings and are just emerging in recent years [14], [15]. Furthermore, a study by Royzman and Rozin [16] suggests that it may be beneficial to study appreciative joy with altruism in general. At the same time, not discounting nostalgia, as it is an important emotion in bringing our social world together by allowing us to interact effectively which in turn predicts positive behavior and attitudes towards others [17], and an important phenomenon that relates to our past to the present concerning the development of our social [18]. Therefore, it would be interesting to see how nostalgia would point towards appreciative joy and potentially lead to prosocial behavior. Given the importance of the variable mentioned, this study aims to examine the mediating role of appreciative joy on the relationship between nostalgia and prosocial behavior.

A complex and conflicting emotional state as it may elicit both positive and negative emotions at the same time [19]. Interestingly, before the 20th century, nostalgia is considered as a psychological illness, psychiatric disorder, or medical disease; but only after in the late 20th century, it is considered as a fond memory of self and others that is psychologically nourishing and energizing [20]. The word nostalgia comes from a combination of two Greek words: where *nóstos* means return home or homecoming and *álgia* means pain or suffering [21]. In the past, nostalgia is often referred to as an 'illness' for people who are suffering from being away from home by their strong desire to return home. Not being able to understand or treat it, in the early history of nostalgia, it is often dismissed as it was perceived as not useful and irrelevant [18]. If individuals were severely affected by nostalgia, they may be placed in a psychiatric ward.

However, recent research done on nostalgia over the years has found that it is fundamentally a common human experience that serves several important psychological functions in human beings [22]. Examples of the function of nostalgia include increasing self-esteem, combating loneliness, reducing antisocial behavior, and increasing prosocial behavior [10], [12], [23], [24]. On top of that, nostalgia also brings upon the emotion an individual once felt during the time of the event [25]. Even so, nostalgia is characterized as a mixed emotion that has both positive and negative aspects to it, and the feeling of intensity varies among individuals as well as the timing of it being felt [26].

In this study, nostalgia is conceptually defined as a bittersweet self-relevant, and deeply social emotion that is evoked by remembering past event(s) [20], [27], [28]. When an individual is in a nostalgic state, they often recall past events that are having positive valence and are meaningful however upon the awareness of the event is in the past, it might result in sadness [29]. However, nostalgia is argued to be predominantly a positive emotion [30]. Even when the narrative of the nostalgic story is not positive, it would still evoke a more positive affect than a negative [22].

As known as *Sui Xi* in Chinese [31], appreciative joy is conceptually defined as feeling happy for another individual's positive event(s) [32]. It is also one of the four prosocial attitudes cultivated by Buddhism [13]. However, it is not limited to only Buddhist culture, as it is ingrained in Chinese culture as well [31]. A feeling that is not only limited to human beings but could be towards all living organisms [33]. For example, it could range from feeling joyous for a close family member's success to seeing a stray animal finally having food to eat, and even to seeing a growing plant bud. However, this paper only looks at a feeling of appreciative joy for other human beings, as it is something more relatable to as compared to other living organisms. Unfortunately, appreciative joy is one of the attributes that is currently lacking in human beings as most individuals are just focused on their good and comfort [33]. This could be due to, appreciative joy being an emotion that is potentially difficult to elicit compared to the likes of loving-kindness or compassion, as it requires one to feel happy for others even when they are suffering or are experiencing setbacks [34] as cited in Zeng *et al.*, 2017c. For ease of understanding and reading, in this study appreciative joy would be the representative word for altruistic joy, sympathetic joy, and symhedonia as these terms conceptually share the same meaning as appreciative joy [33], [35]. Although appreciative joy and empathetic joy have similar effects and underlying mechanisms, they are both differing concepts. Appreciative joy involves relating to another's emotion from the observer's point of view while empathetic joy is the understanding or sharing of another's emotion from the observer's point of view [13].

## 2. LITERATURE REVIEW

In this study, prosocial behavior is conceptually defined as performing helping behavior, sharing, nourishing, and feeling empathetic with others [36]. A behavior that is already observable in young children [37]. Prosocial behavior is developed once an individual could perceive others' needs and can spontaneously provide the help needed [6]. Prosocial behavior is aimed at comforting, sharing, and helping others voluntarily [6]. Where the sub-component of prosocial behavior includes altruism, cooperation, mutualism, and helping [38]. Prosocial behavior here excludes actions that acts as a purpose for social communication or one that aims to exploit or benefit from its recipients; however, in some case, prosocial behavior could be

beneficial for the actor, while incurring a cost for the receiver [39]. For example, a student (actor) gives a much-needed comment for his teacher (receiver) to improve on his teaching style. By taking the comment and improving on it incurred a cost while an improved teaching style would benefit the student. Potential functions of prosocial behavior could act as a protective factor against problematic or delinquent behavior [40], and is an important factor in predicting the manifestation of antisocial behavior [41]. Additionally, prosocial behavior could increase an individual's positive emotions [42].

When individuals recall a nostalgic memory, it mostly involves close others which makes nostalgia a self-relevant and highly social emotion [43]. Interestingly, a recurring theme of nostalgic memories involves social settings, where it often includes interactions with others [44]. For example, playing with a friend in the playground during childhood, attending relatives' weddings, or going on a trip for the first time with family members. These examples highlight that nostalgic memory is often tied to settings that involve social interactions.

These recollections of nostalgic memories enable individuals to feel satisfied as it reassures them that they belong to a meaningful social relationship temporarily [45] offset negative social threat (e.g. compromising social connectedness) [46]. In turn, nostalgic memories reencourage an individual to have the desire to form an emotional and symbolic connection [47]. Hence, they would find a way to fulfill their wants and build a bond with others. Because of a perceived bond with another individual, it allows them to feel socially connected and supported by others [24]. Thus, this reduces perceived interpersonal distance which facilitates helping behavior, intergroup contact, and trust [48], at the same time reducing prejudicial attitude and increasing acceptance towards outgroup [28], [49]. The acceptance of belongingness to a social group influences prosocial intentions towards others [50]. Having this social relationship may lead an individual to feel more interpersonally competent in terms of willingness to provide help and having charitable intentions [4]. By feeling more competent in helping, would encourage an individual to engage in more prosocial behaviors [51].

Another function of nostalgia is that it has the capabilities to translate psychological inspiration (motivation) into action [52]. Nostalgia being a social emotion, have a sociability function that motivates the social self [45]. A motivational force that facilitates an individual to proactively take actions [48]. Once an individual experienced a motivated social self, this intrinsic motivation would then turn into prosocial behaviors [46]. This may be because they interpret their presence as a hedonic experience with empathy thus an individual would be more likely to feel inspired and to help other people when they are feeling nostalgic [26]. Meaning when one feels nostalgic as a hedonic experience with empathy, it would motivate actions for prosocial behavior.

Research done by Stephan *et al.* [4] found that participants in the nostalgic condition exhibited more helping behavior than participants in the control condition. As nostalgia motivates people to act on their thoughts [53]. Likewise, research by Ford and Merchant [54] found that nostalgia evokes a higher emotional and donation response especially for those who rated the nostalgic memory as important. Contrary, research done by Abeyta *et al.* [55] suggest that feeling nostalgic could drive people away from feeling socially connected thus decreasing social intentions as it may evoke negative emotions and are maladaptive; suggesting that if people have avoidant attachment style and content of nostalgic memory caused negative emotion (e.g. mistrust), it is likely that they would not perform prosocial behavior. This points towards the possibility that the content of nostalgic memory is an important predictor of prosocial functions [56]. As suggested by Cho *et al.* [57] positive experience is one of the essential psychological antecedents for increased behavioral intention. This means that prosocial behavior is more likely to be a result of positive nostalgic episodes compared to negative nostalgic episodes.

Based on the aforementioned studies, nostalgia is predominantly a positive emotion and has several positive roles, including fostering social connections that possibly motivate prosocial behaviors. Leading to the first hypothesis of the present study is: there will be a positive relationship between nostalgia and prosocial behavior.

A potential component that contributes to appreciative joy would be recalling past positive experience that involves other individuals [31]. Nostalgia is one of the emotions that fulfill both the condition: i) ability to evoke past positive experience and ii) social emotion that involve others. Nostalgia is highly correlated with joy and warmth through recalling past positive events [58]. However, it is possible that nostalgia would lead to negative emotions (e.g. sadness) [59]. An example of nostalgic memory that elicits both positive and negative emotions would be, a superior and familiar stable past that involved happy times that could generate a feeling of joy and aftermath of the feeling of loss [60]. For example, recalling memories of previously owned loved pets that have passed away. However, if only reflecting on nostalgic memory for a short moment, it may replace this kind of joy-sadness emotion with a joy-calmness emotion. Additionally, a study conducted by Li *et al.* [61] found that participants in nostalgic conditions reported feeling joyous. This suggests that recalling nostalgic memories for a short moment would be optimal in trying to elicit appreciative joy, as joy-calmness would be a more desirable emotion in eliciting appreciative joy.

On top of both the components mentioned, seeing and relating to others' happiness and success in an observer's position would be another essential component to trigger appreciative joy [35], [62]. This is a component that nostalgia might be able to address. As nostalgia is closely related to having appreciative attitudes towards self and of objects or people in memories that were involved during recall [63], [64]. However, research done by Royzman and Rozin [16] found that the content of nostalgic memory also plays an important role, as recalling ego-relevant nostalgic memories may give rise to the emotion envy which is said to be conflicting with appreciative joy. Another thing to note is that appreciative joy is mostly present in healthy close relationships [65]. As it would be easier for individuals to feel appreciative joy towards a target if they have prior positive emotional attachment or bond [16]. For example, seeing a significant other's success would trigger appreciative joy much easier than seeing a total stranger's success. Therefore, when trying to elicit appreciative joy through recalling nostalgic memories, it may need to involve a specific event that is limited to only positive social events, otherwise, it may not elicit appreciative joy.

Overall nostalgia is potentially a positive joyous emotion, and that can foster an appreciative attitude towards others, at the same time, it is a social emotion that could reduce interpersonal distance [48], build social bonds [24]. By piecing these together, it seems to fit a certain core component of appreciative joy. Therefore, the present study hypothesized that (Hypothesis 2): There will be a positive relationship between nostalgia and appreciative joy

Appreciative joy is positively correlated with subjective well-being, positive emotions [66]; and is closely related to altruism and kind intentions towards other individuals [13]. Having positive behavior and kind intentions towards others points toward prosocial behavior. A study by Sirotna and Shchebetenko [67] also describes appreciative joy as prosocial. Possibly due to its aspect of sympathetic concerns that motivates altruistic prosocial behavior [16], [68].

Appreciative joy being a social emotion, allows individuals to feel joyous for others [35], as it is an other-focused positive emotion [13]. Appreciative joy is closely related to positive attitudes towards others and even outgroups [69]. As it concerns the feeling of happiness for more superior others despite their own' inferiority or self [14]. This means that appreciative joy should not be a discriminative or selective emotion that is only elicited when one is feeling or perceiving themselves as superior over others 'success'; it should be a feeling of happiness for anyone's fortune despite others' or self's status.

As positive emotion stimulates prosocial behavior [70]. Feeling happy for others' success could be a motivation to perform prosocial behavior [71]. Akinin *et al.* [42] also state that an individual would be more likely to perform prosocial behavior when in a positive emotional state. Because when in a positive emotional state, an individual is more likely to notice the needs of others and thus act pro-socially [42]. Another reason could be, an individual may have the need to maintain the positive emotional state that they are in, thus by acting pro-socially, it would mean that they are viable in maintaining their positive emotional state [72]. Additionally, by acting pro-socially, it would not only benefit the target but also the actor itself which again contributes to their positive emotional state [7]. Probably due to acting pro-socially, it could benefit themselves as there is a deeply rooted human nature self-rewarding mechanistic desire to help others [73]. This may lead to a feedback loop where positive emotion leads to prosocial behavior that leads to feeling positive emotion and the cycle continues until either one of the components is no longer being sustained.

Appreciative joy is another-orientated emotion that could promote social connectedness [13]. On top of that, appreciative joy could suppress interpersonal negative emotions by reducing envy [62]. Enhancing social interaction that could result in prosocial behavior [68]. As the social distance (psychologically) between the actor (helper) and target decreases, a higher amount of helping behavior will be observed; this is due to the perceived cost of helping a close other being less than helping a stranger [74]. So appreciative joy may lead to prosocial behavior due to the need to maintain a state of homeostasis as a form of self-representation, having sympathetic concerns towards others, and feeling socially connected with others. Which led us to hypothesize that there was a positive relationship between appreciative joy and prosocial behavior, as well as that the relationship between nostalgia and prosocial behavior is mediated by appreciative joy.

A better understanding of would nostalgia elicits appreciative joy which in turn increases prosocial behavior could be beneficial for the theories concerning prosocial behavior as well as for emotions in general. A possible practical implication could be for the counselor or people with a similar profession to help their clients to increase prosocial behavior by introducing nostalgic elements in their client if they see fit, or to facilitate appreciative joy through nostalgia [32]. Alternatively, charitable organizations or non-profit organizations could use nostalgia and appreciative joy to increase an individual's prosocial behavior. As nostalgia involves positive interpersonal memory that could weaken the desire for money [75].

### 3. RESEARCH METHOD

This research employed an experimental single-factor independent design, with one independent variable, one mediator, and one dependent variable. This experiment was conducted online. This research uses an experimental method to manipulate the conditions for the participants. This design allows for statistical evidence between the independent variable (nostalgia) on the mediator (appreciative joy) and the outcome variable (prosocial behavior), and the indirect effect in one study [76]. Additionally, a study done by Newman *et al.* [26] found that when nostalgia is induced experimentally, participants felt more nostalgia and positivity.

#### 2.1. Participants

As age could be a factor affecting the experience of nostalgia and it is found that younger adults and older adults are more prone to experiencing nostalgia especially for those who are in the phase of transitioning, for example, a transition like moving away from home for the first time [27]. However, older adults are more likely to experience nostalgia as a mixed emotion and more broadly [77]. Older adults reported negative effects from nostalgic recollections whereas for young adults it has more of a positive social experience [78]. Apart from that, when older people feel nostalgic, it may result in them feeling youthful which is associated with social connectedness [79]. All this may skew the result of this study which is unsought of because of the extraneous outcomes that are unrelated to this study. Therefore, participants' age range is being kept to younger adults who are between 18 to 25 years old.

One hundred and twenty-four participants aged between 18 to 25 years old from a private university in Malaysia regardless of gender or ethnicity were recruited to participate in this study. Participants were recruited from an online portal called psych experiment portal (IPSY) by using the haphazard sampling method, where only individuals from the private university and with an account could access it. The number of participants was determined by G\*Power analysis with a medium effect size of 0.15, 0.95 power, an alpha value of 0.05; 17 additional participants are added to ensure there are enough participants for the study. This study has a final sample of 123 as one of the responses has to be removed from analysis due to non-adherence to the researcher's instruction. The age of participants ranges from 18 to 24 years old, with a mean age of 21.2 years old with a standard deviation of 1.01.

There is a total of 10 sessions for the participants to choose which time slot they are more convenient to join. Each session only allows for a maximum of 14 participants to sign up. Each session represents a condition, which is either a nostalgic condition or a control group.

As a token of appreciation for participating in this study, 0.25% extra credit was being awarded to the participants as it takes approximately 30 minutes to complete the study. Some of the participants in the study are acquainted with the researcher. As to maintain professionalism, the researcher speaks and behaves professionally to all participants during the study.

#### 2.2. Materials

##### 2.2.1. Experimental conditions

The material used to measure the independent variable (nostalgia) is the nostalgia or ordinary-event writing task [22]. Participants will be asked to bring their minds to either a nostalgic event or an ordinary event in their life depending on the experimental condition they were assigned to. Take a few minutes (5 minutes) to think about the experience. Then write down four relevant keywords in the said event. Then answering the two items manipulation validation check, on a 6-point Likert scale where 1 indicating strongly disagree while 6 indicating strongly agree. It is scored on the total average on the manipulation validation check, where a higher total average score indicates a higher level of nostalgia. One of the sample items is "Right now, I am feeling quite nostalgic."

The nostalgia or ordinary-event writing task is used as it gives sharper focus on the emotion itself as participants were required to specifically recall the nostalgic event and write about the experience [22]. Whereas comparing to using music to elicit nostalgia, it might be eliciting other emotions at the same time as well [80]. Therefore, the nostalgia or ordinary-event writing task were used. Examples of research that use the same material to manipulate nostalgia are research done by Sedikides *et al.* [81] and another study done by [27] Both studies have reported that the manipulation for nostalgia was successful.

##### 2.2.2. Appreciative joy scale – friends (AJS-F)

This scale was used to measure appreciative joy. It is a 14-item questionnaire, on a 9-point Likert scale where 1 indicates not at all like me and 9 indicates totally like me. Operationally defines as the total score on the appreciative joy scale – friends (AJS-F), where a higher total score indicates a higher level of appreciative joy [35]. There are three dimensions to this scale which are 'Participants' sense of joy,' 'Positive interpersonal bias,' and 'Self-transcendence.' Example items include, "I would be sincerely happy for my friends' achievement," "When I think of a friend, the first thing that comes to my mind is his or her positive

quality,” and “Even if my friends are better than me, I am still quite willing to see them succeed.” The Cronbach’s alpha for the three-dimension ranged from .87 to .90; due to the high correlation between the dimension, the total score is being used [13]. In this study, the scale is being adapted to not only measure appreciative joy towards friends but other individuals the participants may have in their mind; such a factor would not lead to the essential difference in measurement methods [35]. Therefore, for this research, the researcher had verbally told all the participants that even when the questionnaire had mentioned the word ‘Friends’, they could substitute it with whoever had come to their mind.

### 2.2.3. Adult’s prosocialness scale

This scale was used to measure prosocial behavior. It is a 16-item questionnaire, on a 5-point Likert scale where 1 indicates never true and 5 indicates always true. Operational defined by the total average score on the Adults’ Prosocialness Scale, where a higher total average indicates greater prosocial behavior [36]. Sample items are “I am available for volunteer activities to help those who are in need.” and “I immediately sense my friend’s discomfort even when it is not directly communicated to me.” This scale has a Cronbach’s alpha of .91.

Other materials used are informed consent forms. It is very important to make sure the participants know the details of the study, their rights during the study, and participate voluntarily in the study. Another material used in the demographic form where participants are required to fill in their age and gender.

## 2.3. Procedures

Participants were assigned to one of the conditions (control group or experimental group) according to the slot they have signed up for. Each condition is capped at 62 participants. Each session is capped at 14 participants. Participants will not know which experimental condition they will be signing up for.

Upon signing up, the researcher had sent participants an email that directed them to join the Teams on Microsoft Teams (MS Teams) according to the time slot they have signed up for. They have been reminded to be in a quiet and comfortable place with a stable internet connection during the experimental session. This study was conducted live online using Microsoft Teams and Google Forms.

At the start of the session, the participant’s attendance was noted for extra credit only. Afterward, participants were directed to Google Forms where they will be filling in their responses for the study. Then they are being briefed on the details of the study. After that, participants are required to complete an online informed consent) and demographic form

For participants who are in the Nostalgic group, they were asked to bring to mind a positive nostalgic event in their life. Specifically, try to think of a past event that makes them feel most nostalgic. Then write down four keywords relevant to this event (i.e., words that sum up the gist of the experience) in the event writing task. Participants were given a few moments (five minutes) to think about the nostalgic event and how it makes them feel, then participants were asked to fill in a manipulation validation check questionnaire. At the same time, the researcher notifies the participants to take note of the definition of nostalgia which is being posted up on the Teams chat. Alternatively, participants in the Control group, there were asked to bring to mind an ordinary event in their daily life (turning on their electronic gadgets)—an event that took place in the last week. Then write down four keywords relevant to this event (i.e., words that sum up the gist of the experience) in the event writing task. Participants were given a few moments (five minutes) to think about the ordinary event and how it makes them feel. Then participants were asked to fill in a manipulation validation check questionnaire.

After filling in the manipulation validation check, participants were required to complete the appreciative joy scale – friends (AJS-F), and adults’ prosocialness scale. The researcher also notifies the participants that when filling in the Appreciative Joy Scale – Friends, it does not necessarily need to be a friend, it could be anyone that comes to their mind. Upon completing all the tasks, participants were thanked for their participation. Thus, one session was done within 30 minutes. At the end of the session, participants were awarded 0.25% of extra credit for their participation in this study.

## 4. RESULTS AND DISCUSSION

### 3.1. Manipulation check

To ensure the participants in the nostalgic group and control group are significantly different in their intended ways, a manipulation check was done. Descriptive statistics shows that participants in nostalgic group ( $M=4.86$ ,  $SD=0.88$ ) have higher score in manipulation validation check than participants in control group ( $M=3.27$   $SD=1.19$ ) and there is a significant difference between nostalgic group and control group  $t(112.28)=8.40$ ,  $p<.001$ . Which indicates manipulation was successful.

### 3.2. Descriptive statistics

The current study aims to examine the mediating effect of appreciative joy in the relationship between nostalgia and prosocial behavior. Descriptive statistics shows that the mean and standard deviation of nostalgia ( $M=1.5$ ,  $SD=0.50$ ), appreciative joy ( $M=101.08$ ,  $SD=14.90$ ), and prosocial behavior ( $M=3.88$ ,  $SD=0.45$ ). The mean and standard deviation of the three variables will be presented in Table 1.

Table 1. Descriptive statistics for nostalgia, appreciative joy, and prosocial behavior

	M	SE
Nostalgia	1.5	0.50
Appreciative joy	101.08	14.90
Prosocial behavior	3.88	0.45

### 3.2. Assumption tests

As the total number of participants ( $n=123$ ) was lesser than 2,000, Shapiro-Wilk was used to test the assumption for normality. The assumption of normality was not met for nostalgia, Shapiro-Wilk ( $123$ )=.93,  $p<.001$ . The assumption of normality was not met for appreciative joy, Shapiro Wilk ( $123$ )=.94,  $p<.001$ . The assumption of normality was met for prosocial behavior, Shapiro-Wilk ( $123$ )=.99,  $p=.443$ . The overall assumption of normality is not met. Therefore, Kendall's Tau was used to analyze the correlation between nostalgia, appreciative joy, and prosocial behavior. There is no significant correlation between nostalgia and appreciative joy ( $r=.01$ ,  $p=.917$ ). Correlation between nostalgia and prosocial behavior was also not significant ( $r=-.10$ ,  $p=.239$ ). However, the correlation between appreciative joy and prosocial behavior was significant ( $r = .34$ ,  $p<.001$ ). The correlation between variables is shown in Table 2.

Table 2. for Nostalgia, appreciative joy, and prosocial behavior

Variable	n	1	2	3
1. Nostalgia	123	-	.01	-.10
2. Appreciative joy	123		-	.34**
3. Prosocial behavior	123			-

\* $p < .05$ . \*\* $p < .001$

The assumption of linearity was met for both nostalgias on prosocial behavior and appreciative joy on prosocial behavior. Following the histogram and normal probability plots, the assumption of normality was assumed. The assumption for homoscedasticity was met, as the graph did not show any funneling. There was no multicollinearity between nostalgia and appreciative joy as the variance inflation factors (VIF) were less than 10 and tolerance value was more than 0.2 for both nostalgia (Tolerance=1, VIF=1) and AJ (Tolerance=1, VIF=1). The assumption of independence of error was assumed as the value is close to 2, Durbin-Watson=1.

### 3.3. Hypothesis testing

Even though the assumption of normality is not met it is not an issue, as in PROCESS, the indirect effect is estimated using bootstrapping which does not require the assumption of normality to be met. PROCESS Macro V 3.5 by Hayes, (2017) was used to analyze the mediating effect of appreciative joy on the relationship between nostalgia and prosocial behavior. The overall model consisting of nostalgia and appreciative joy significantly predicts prosocial behavior,  $F(2,120)=19.21$ ,  $p<.001$ ,  $R^2 = .24$ , explaining 23% of variance in prosocial behavior. Nostalgia did not significantly predict appreciative joy,  $F(1,121)=0.04$ ,  $p=.848$ ,  $R^2=.00$ , explaining 0% of the variance in appreciative joy. Nostalgia did not significantly predict appreciative joy,  $b=0.52$ , 95% CI [-4.82, 5.86],  $t(123)=1.92$ ,  $p=.848$ . Appreciative joy significantly predicts prosocial behavior when controlling for nostalgia,  $b=0.02$ , 95% CI [0.01, 0.02],  $t(120)=6.08$ ,  $p<.001$ . Nostalgia did not significantly predict prosocial behavior,  $F(1,121)=1.10$ ,  $p=.279$ ,  $R^2=.01$ , explaining 1% of the variance in prosocial behavior. Nostalgia did not significantly predicts prosocial behavior,  $b = -0.09$ , 95% CI [-0.25, 0.08],  $t(121)=-1.05$ ,  $p=.297$ . Figure 1 presents conceptual diagram that reveals indirect effect of nostalgia on prosocial behavior through appreciative joy.

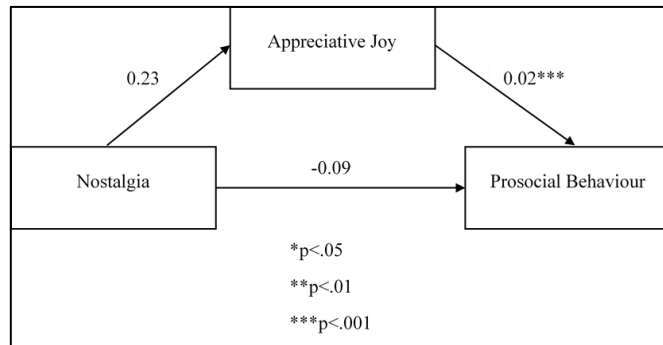


Figure 1. Conceptual diagram for the indirect effect of nostalgia on prosocial behavior through appreciative joy

### 3.4. Discussion

This study examines whether appreciative joy mediates the relationship between nostalgia and prosocial behavior. In which it was hypothesized that the relationship between nostalgia and prosocial behavior will be mediated by appreciative joy. Results indicate that appreciative joy does not mediate the relationship between nostalgia and prosocial behavior. As only hypothesis 3 were supported while hypothesis 1, 2, and 4 were not supported.

A possible explanation for the non-statistically significant relationship between nostalgia and prosocial behavior could be due to the nature of nostalgia which can elicit both positive and negative emotion at the same time [19]. Whereby a negative affective state could reduce prosocial behavior [39]. This is in line with a study done by Abeyta *et al.* [55], explaining that when participants have avoidant attachment styles and feel mistrust, that leads to a decrease in motivation to perform prosocial behavior. As feeling mistrust and high attachment avoidance would drive individuals away from any social affiliation or goals. Similarly, a study done by Drouvelis and Grosskopf [82] found that when an individual is feeling negative emotion (anger), they would be less likely to be involved in prosocial behavior as compared to individuals who are feeling positive emotion (happiness); individuals would even judge others more harshly when feeling negative emotion. The reason is, when one perceived fairness norm is being violated, it leads an individual to feel negative emotions and wants to punish the norm violator.

Another reason could be due to this experiment did not manage to bring about a hedonic experience with empathy through recalling nostalgia events; Thus, participants in this current study may not feel inspired to help others [26]. Empathy is an important element that allows for altruistic behavior in general [83] and charitable behavior of expanding time to help others [75]. Therefore, say that without feeling hedonic experience with empathy, individuals would lack the motivation to perform or engage in prosocial behavior.

In short, it is possible that the experience derived from nostalgic events is not a hedonic experience with empathy; and negative emotion elicited by nostalgia could lead to either wanting to avoid social interactions or punishing what they had seen as unfair. Thus, in this study, nostalgia did not predict prosocial behavior. Our results also show that there is no statistically significant relationship between nostalgia and appreciative joy. A possible explanation could be, to elicit the emotion of appreciative joy, it requires a relatively strong emotional attachment, a kind of emotional attachment that is not easy to bring about in a single experimental session [16]. Suggesting that the social element in the nostalgic episode may need to have a significant other that they have a strong emotional bond, and to see a result, individuals may be required to recall such memory for a fixed interval over a while.

Another reason could be as described by Zeng *et al.* [35] where the first step of developing appreciative joy would be feeling happy for ourselves first, then only one would be able to feel happy for close others, and then feeling happy for strangers and others. This may not be enough just from indulging in nostalgic memory. Even if participants are feeling positive emotions from recalling nostalgic events, it does not necessarily mean that they would be happy for themselves or others. Additionally, nostalgia and happiness are two distinct emotions. Even if it has characteristics that partially overlap with each other, it does not equate to one another [3]. Also, when an individual perceived another as more fortunate than themselves, it would require a stronger level of love and compassion to experience appreciative joy [84].

In essence, appreciative joy is an emotion that requires time to develop, unless having a prior strong emotional attachment(s) with others. On top of that, it needs more than feeling happy for self and others to elicit appreciative joy. This may be something that nostalgia was not able to establish within the duration of this experiment; showing that recalling past positive social events for a short period may not be sufficient to elicit appreciative joy.



Finally, the third hypothesis which proposed that there will be a positive significant relationship between appreciative joy and prosocial behavior was supported. Findings showed that it is consistent with past research, indicating that appreciative joy could potentially contribute to prosocial behavior. Agreeing with Zeng *et al.* [13] and Sirotina and Shchebetenko [67], suggesting that appreciative joy has a close relationship with altruism in general and is prosocial. As appreciative joy involves kind intentions towards others [32], and is highly positively correlated to positive empathy [13]; and positive empathy is a positive affect.

Positive affect acts as a reinforcement for prosocial behavior and the relationship is reciprocal thus, strengthening the relationship between one another [85]. Meaning that when one is feeling happy for another, they will be more likely to perform prosocial behavior, and seeing the target's happiness or 'success' after performing prosocial behavior, would lead to a strengthened relationship between the actor and target, and possibly repeating the behavior for others. Agreeing with the mood maintenance hypothesis, where when an individual is in a positive affective state, they would be motivated to prolong the positive affective state [72]. Where in this current study, it may be the participants are trying to maintain the positive affective state evoked by feeling appreciative joy.

However, the relationship between appreciative joy and prosocial behavior could be due to extrinsic and moral obligation which is highly valued in collectivist culture as it is expected for them to show interdependence and conformity to societal norms [73]. People performing prosocial behavior could be a way of 'self-representation' [86]. Especially for those individuals who wish to show their moral character through actions [87]. Coincidentally, appreciative joy is rooted in a collectivist culture, where it may be a reason why it is closely related to altruism in general. However, the underlying mechanism is still unclear and has not been explicitly tested out yet.

To summarize the relationship, it could be said that when one is feeling appreciative joy, it puts the individual in a positive affective state. This positive affect would then facilitate a motivation to maintain it, which may prompt a positive behavior. Thus, when an opportunity to perform prosocial behavior is presented, it is more likely that they would engage in it.

#### **3.4.1. Theoretical implication**

Even though theoretical explanations were provided for the non-significant results, theories that speculate nostalgia would point towards appreciative joy and prosocial behavior would require further study and revision. As findings in this study suggest that nostalgia is not significantly correlated to prosocial behavior and appreciative joy. From a theoretical perspective, this study could point towards the possibility and theoretical explanation on why appreciative joy does not mediate the relationship between nostalgia and prosocial behavior in general.

#### **3.4.2. Practical implication**

It is expected that a better understanding of how nostalgia elicits appreciative joy which in turn increases prosocial behavior could be beneficial for the theories concerning prosocial behavior as well as for emotions in general. A possible practical implication could be for the counselor or people with a similar profession to help their clients to increase prosocial behavior by introducing nostalgic elements in their client if they see fit, or to facilitate appreciative joy through nostalgia [32]. Alternatively, charitable organizations or non-profit organizations could use nostalgia and appreciative joy to increase an individual's prosocial behavior. As nostalgia involves positive interpersonal memory that could weaken the desire for money [75].

On a wider application, the general public may want to be aware of the importance of appreciative joy in prosocial behavior. To have a better co-existence with others, they could practice a culture of appreciative joy. Also noting that from time to time it may be beneficial to feel nostalgic, but at the same time, one may want to be mindful of the outcome of feeling nostalgic, as it may potentially prevent us from being prosocial. Secondly, charitable organizations or organizations that profit or benefit from the prosocial behavior of others could consider imparting appreciative joy messages in their targets to increase their prosocial behavior. At the same time minimizing effort(s) put in trying to convey the message through having nostalgic elements in it.

Finally, another practical implication could be for therapists or people with similar professions. They could integrate elements of appreciative joy in their interventions to cultivate cultures of appreciative joy in individuals who may have issues in performing prosocial behavior. Specifically, this could potentially help their clients to maintain a harmonious co-existence among each other (e.g., close friends, or family members) through appreciating each other's 'success' and being prosocial towards each other. However, when trying to promote prosocial behavior, a therapist may want to consider not letting the target feel nostalgic as it may risk the target to feel negative emotion that does not lead to prosocial behavior.

### 3.4.3. Limitations and future recommendations

Every study comes with limitations. For this study, the source of participants is only from a private university in Malaysia, aged 18 to 25 years old; which may result in selection bias in participants. This limits the generalizability of the results to other age groups and cultures. Even if the conceptual definition of nostalgia is often similar across cultures [88]. However, as mentioned, when older adult is feeling nostalgic, they are more prone to feeling youthful which is associated with social connectedness which then potentially contributes to prosocial behavior [79]. Despite having a similar definition, the outcome of feeling nostalgic could be different. Consequently, due to this underlying factor, it might be beneficial if a wider age range were included for future studies.

This current study only includes positive emotions (appreciative joy) as mediators. While nostalgia is a multifaceted emotion, it could lead to negative emotions such as sadness or envy [61]. Therefore, it may be beneficial to consider both positive emotions and negative emotions as a mediator as an extension for this study. The reason is, this could potentially provide a more holistic and contrasting explanation towards theories of emotions in prosocial behavior. While it is also possible that contradicting emotions (positive emotion vs negative emotion) would complement each other for a more desirable outcome [89].

While this current study did not specify whose 'success' the participants are relating to when filling in the appreciative joy scale – friends or who are they going to perform the prosocial behavior to. It may be beneficial for future researchers to address a specific target population (e.g., stranger or close friend) for the participants to relate to. The reason is, relating to someone who is psychologically closer to me may involve potential positive bias (e.g. when I think of my best friend, I recognize his positive qualities first; [31], [35]. In line with Padilla-Walker [40] saying that helping a stranger is different from helping someone with whom they have a relationship. Thus, this may skew the score on the scales as it is more likely for an individual to feel appreciative joy and perform prosocial behavior for someone to who they are psychologically closer. This might cause the result to not be applicable when the target population has changed (e.g., change from stranger to close friend or vice versa) and thus potentially limit the generalisability of the findings of the study. Being prosocial towards a population may not necessarily translate to having the same pro-sociality towards a different population; the same goes for appreciative joy.

Due to the design of this study, it has limited ability to infer causation of mediator (appreciative joy) on the outcome (prosocial behavior), therefore are not clear in explaining the temporal antecedence of the relationship as it is subject to alternative explanations; for that reason, confounding variables could be included in future studies to reduce the possibility of attributing the explanation for the relationship to another variable [76].

This study only uses a questionnaire to measure the variables. Which leads to concerns about filling questionnaires. As it could be highly susceptible to social desirability bias [90]. As participants are concerned about their self-presentations, they may underreport socially undesirable tasks and overreport socially desirable tasks [91]. This might be the case for prosocial behavior, as there might be a discrepancy between answers filled in the questionnaire compared to actions carried out in reality. Even though anonymity is promised to our participants, this is not enough to ensure the accuracy and honesty of their responses, especially participants who joined the experiment for the sake of only obtaining extra course credit [92]. To counter this, the researcher could use multi-modal survey administration with simple terms and relevant examples so that responses would be more realistic, and triangulation of data source, and aware of the strength and weakness of such experimental methods to maximize the research validity and replicability [90]. Therefore, it might be beneficial if observational or informant data were used in future research to limit social desirability bias.

## 5. CONCLUSION

This study aimed to examine the mediating role of appreciative joy in the relationship between nostalgia and prosocial behavior. However, findings showed that the application of appreciative joy was not successful in mediating the relationship between nostalgia and prosocial behavior; and only the relationship between appreciative joy and prosocial is statistically significant. Suggesting that appreciative joy leads to higher prosocial behavior. However, it is not to say with certainty that this will necessarily be the case, as more research needs to be done to provide a stronger conclusion with more evidence. Where results may vary in different settings or populations. To conclude, as important as it is for one to feel nostalgic, but do not forget to be happy for each other's successes for a possibly better society as a whole.

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