Bidirectional Relationship between Threat Perception and Political Ideology: Does the Type of Threat have an Effect on Social and Economic Aspects of Ideology?

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Author Note

The study was pre-registered to Open Science Framework before the data analysis process. The pre-registration and relevant files can be retrieved from osf.io/saz9j/

Abstract

Many social scientists have studied the relationship between perceived threat and political ideology. Although, there is a common understanding that threat perception causes an ideological shift, there are some competing findings on this relationship. While some studies discuss conservative attitudes as a determinant of threat perception, some researchers argue ideological polarization. On the other hand, some researchers found that higher levels of perceived threat increase the right-wing attitudes and make people more conservative. In recent years, the potential bidirectional relationship between these variables was brought to attention. In the current study, we first discuss the existing literature and introduce methodological and theoretical discussions. We, then, aim to understand the possible bidirectional relationship between perceived threat and political ideology over a year-long study. The current study investigated the relationship between four types of threat (feeling tense, fear of death, financial worries, and value threat) and four aspects of political ideology (opinions on social, economic, and outgroup policies and political ideology spectrum from liberal to conservative). To demonstrate that different types of threats have varying effects on aspects of various political ideologies, we built 16 general cross-lagged panel models. Our results concluded that fear of death, value threat, and financial worries were found related to conservative attitudes in some aspects of ideology, and feeling tense was found a liberal shift in outgroup policies.

Keywords: political ideology, threat perception, general cross-lagged model, bidirectional relationship

Bidirectional Relationship between Threat Perception and Political Ideology: Does the Type of Threat have an Effect on Social and Economic Aspects of Ideology?

For a long time, political psychology researchers considered strict differences between conservatives and liberals and linked them to various psychological attributes. One of these differences is threat perception. The questions of how people perceive threats and how they react to it attracted many researchers' interest. Thus, the relationship between threat perception and political ideology has been a common interest among social and political psychology researchers (Jost et al., 2003; Morgan & Wisneski, 2017; Nail et al., 2009; Onraet et al., 2014; Skitka & Tetlock, 1993; Jost et al., 2003; Roets et al., 2017). These researchers usually agreed on the fact that higher levels of threat perception cause an ideological shift; however, the direction and strength of the relationship were widely discussed. Additionally, the causes of and psychological processes behind these mechanisms have been a common interest (Duckitt, 2001; Greenberg & Jonas, 2003; Jost et al., 2003). In this paper, we first discuss the previous findings in this subject, point out the cognitive mechanisms behind this relationship, and argue some methodological problems. We then introduce our models to investigate the bidirectional relationship between threat and political ideology by using 12-months longitudinal data.

While the idea of an ideological shift in case of a potential threat is accepted among many scientists, researchers show disagreement on the direction of this effect. For example, the reactive-liberals hypothesis explains the shifting towards right-wing attitudes among people with liberal opinions (Nail et al., 2009). According to reactive-liberals hypothesis, people become more conservative when they are faced with a threat. In the experiments of Nail and colleagues (2009), threat perception was manipulated by the sense of injustice and mortality salience. Both threats were found related to conservative shift since these conservative attitudes manage the

feelings of vulnerability and anxiety. In addition to a conservative shift, this hypothesis claims that ideological shift among liberals is greater than conservatives. So, liberals were considered to be more reactive towards threat.

The rigidity-of-the-right hypothesis is another perspective towards ideological shift, which was evaluated as a strong theoretical view in social psychology (Tetlock, 1984). This perspective attributes conservatism an ego-defensive function and considers conservative people to be more rigid, less intolerant, and more dogmatic; thus they were thought to be more open to perceive threat and react to it. In addition to this perspective, Jost and colleagues (2003) investigated the psychological motives and cognition behind political conservatism from a motivated social cognition perspective. Motivated-Social Cognition (MSC) perspective considers the role of behavior to satisfy people's psychological motives (Kunda, 1990). MSC acknowledges the fear of threat as a component of political conservatism (Jost et al., 2003). They claim that threat management is associated with existential motives while uncertainty management is related to epistemic motives. The meta-analysis of Jost et al. (2003) showed that conservative ideologies root to some social-cognitive motives , such as resistance to change and justification of inequality. From their perspective, political conservatism is predicted by higher needs for order, structure, and closure; lower levels of uncertainty tolerance and openness to experience as well as higher levels of fear and death anxiety. They claim that conservative ideologies require a stronger sense of safety and conservatives respond to threatening worldviews and dangerous situations by forming right-wing political attitudes. For instance, the anxiety due to uncertainty signals an unreliable environment which can be secured by political conservatism, such as increased authoritarianism for reducing uncertainty. Contrary to the idea of reactive liberals, Greenberg and Jonas (2003) offered an alternative view, ideological rigidity. According to their perspective,

similar social-cognitive motives are used by both left- and right-wing attitudes and it only makes the political attitudes more rigid. They associated the fact that people became more conservative under threat with in-group favoritism and ideological polarity. Their perspective suggests that people hold stronger to their political ideologies in the presence of a threat regardless of their ideologies and this creates a polarization between two distinct groups. Also, they introduced a new dimension to political attitudes, different levels of ideological rigidity independent from the political ideology. Another concept that was considered to be a distinct feature between liberals and conservatives is the negativity bias (Hibbing et al., 2014). According to Hibbing and colleagues (2014), negativity bias plays an important role in conservative ideologies and is described as the tendency to perceive negative events more obvious than positive events. Some people are considered to be more sensitive towards negative events, and this tendency was found related to political conservatism due to the role of conservative ideologies in reducing stress and anxiety (Jost et al., 2003). Therefore, people with more right-wing attitudes were considered to be more stressed and anxious because of negative events, whereas people with more left-wing attitudes were considered to be less open to perceive negative events. As opposed to Motivated Social Cognition Perspective, there is also empirical evidence on a shift towards liberalism (Eadeh & Chang, 2020). In their study, the threat was operationalized as pollution, fraud, and risk to healthcare access, and they observed that participants shifted their views towards a more liberal direction.

These perspectives toward political ideology and its relationship with threat were criticized by many researchers for adopting a unidimensional perspective towards political ideology and evaluating ideology as a homogenous trait (Morgan & Wisneski, 2017), being too simplistic (Choma & Hodson, 2017), poorly describing the variables of interests (Crawford, 2017), small

effect sizes and involving various measurement instruments (Proulx & Brandt, 2017). As a homogeneous trait, the negativity bias approach ignores that people's political views might vary on different subjects (Morgan & Wisneski, 2017). For instance, one can be more conservative in terms of societal norms, but more supportive of a liberal economy. Some theoretical approaches to political ideology overlook this possibility and classify people on a spectrum from liberal to conservative. An alternative view by Morgan and Wisneski (2017) points out the between and within variations in political ideology. They argue that while some people can use a liberal-conservative spectrum, some people might have different perspectives. For example, the number of dimensions of political ideology is unknown and multidimensional political ideology is supported by empirical studies. They also add that people vary within themselves. For example, some people use this spectrum to describe their ideologies in certain matters while they use a different classification on other matters. Hence, political psychology researchers should be careful about the methodological limitations while studying political ideology.

Dual-Process Motivational Model of Ideology by Duckitt and Sibley (2009) brought a novel perspective to the study of ideology while pointing out the limitations of previous studies. The major criticism towards the traditional unidimensional view was that it did not find ample empirical evidence in the literature, moreover many assumptions of this perspective, such as its relation to personality traits were not tested empirically at all. Thus, a multidimensional approach to political attitudes was considered by the researchers. Their suggested perspective evaluates political ideology from two different aspects, right-wing authoritarianism (RWA) and social dominance orientation (SDO). According to this perspective, dangerous and threatening worldviews cause higher levels of right-wing authoritarianism. Higher levels of RWA means a tendency to agree on existing social norms and it helps people to achieve a sense of security and

safety in an unpredictable environment. On the other hand, more competitive worldviews cause higher levels of social dominance orientation. Higher levels of SDO means increased preference to the values, such as power, dominance, etc. as well as larger power distance. Both RWA and SDO are considered to have a role of managing the negative feelings due to an unsafe and competitive environment perception. This perspective found empirical evidence in many research after the model was developed (Sibley & Duckitt, 2013; Choma & Hodson, 2017)

Crawford (2017) brings another critical view to the study of political ideology and threat. He argues that threat and conservatism concepts are under defined in the literature. The concept of threat was operationalized in various ways from mortality salience (Nail et al., 2009) to the feeling of anxiety (Onraet et al., 2014). Overall, a common definition of threat has not been launched by social scientists, yet which creates a methodological limitation for us to study threat. His suggestion to describe threat was evaluating it in two different domains, meaning threats and physical threats. Crawford (2017) described meaning threats as abstract concepts that pose a potential risk to the individual, such as violation of one's values. Furthermore, he described physical threats as a potential risk to people's physical safety and well-being, such as death. He argued that conservatives and liberals do not differ in their reaction to meaning threats while conservatives, particularly social conservatives, react to physical threats more severely. This difference might explain that conservatives were found more open to threat when the manipulation of the experiment is mortality salience. In addition to his criticism towards the poor definition of threat, he also criticized the unidimensional classification of political ideology. Unlike Morgan & Wisneski (2017) who claimed that the multidimensional structure of ideology is unknown, Crawford (2017) suggested two categories to define ideology, social ideologies and economic ideologies. Economic ideologies were described as opinions on the role of government

on economic issues, such as healthcare benefits or governmental budget for aiding poor people, whereas social ideologies were described as opinions on the societal norms and values, such as abortion rights or gay marriages (Crawford et al., 2017). As a solution to these methodological problems within the study of political ideology and threat, he finally suggests the Compensatory Political Behavior (CPB) Model which differentiates physical and meaning threats as well as social and economic political ideologies.

While some researchers argue the methodological approach to political ideology, Onraet and colleagues (2013) also argued the operationalization of threat, similar to Crawford (2017). They pointed out that the previous studies used various threat manipulations, such as terrorism, mortality salience, intergroup anxiety etc. and the competing findings in ideological shift can be caused by the features of threat induction used in the experiments. Therefore, differentiating the type of the threat is suggested. For instance, Onraet and colleagues (2014) described internal and external threats in their longitudinal study and concluded that higher levels of external threat result in higher levels of right-wing authoritarianism and social dominance orientation. On the other hand, internal threats did not affect the political attitudes significantly. Another example can be the study of Eadeh and Chang (2020) which the liberal shift might be explained by the threat manipulations used in the study, such as pollution, fraud, and risk to healthcare access.

To sum up, MSC Model evaluates political conservatism with an ego-defensive function and defends the idea of increased right-wing attitudes in case of threats and anxieties (Jost et al., 2003). Right-wing attitudes are expected to predict higher levels of threat perception since political conservatism will help as a threat management function. It can also be expected that conservatives will be more open to potential threats since they are considered more vulnerable to epistemic instability. Moreover, Nail and colleagues (2009) consider defensive conservatism as a

general psychological reaction to the negative feelings caused by threatening situations. Previous studies showed that perceived threat increased right-wing attitudes , such as authoritarianism and social dominance orientation due to a more dangerous and threatening worldview while these attitudes also increased threat perception (Onraet et al., 2014; Matthews et al., 2009). In Onraet and colleagues' study (2014), the change in right-wing attitudes and perception of internal and external threats were investigated. In a three-wave longitudinal study, the authors concluded that higher levels of external threats cause higher levels of right-wing authoritarianism and social dominance orientation. Additionally, higher levels of right-wing authoritarianism was found associated with higher levels of external threat perception. On the contrary, internal threat did not show a significant relationship. Choma and Hodson (2017) also discusses the bidirectional relationship between these two concepts. They concluded that higher levels of right-wing authoritarianism lead to higher levels of perceived risk, while higher levels of social dominance orientation lead to lower levels of perceived risk. Hence, we can discuss a potential bidirectional relationship between threat perception and political attitudes.

The Present Study

We build our research on the question, does the type of threat have an effect on social and economic aspects of ideology. We test three possible hypotheses about this relationship. (1) In case of a threat, people demonstrate more right-wing attitudes on public policies and shift to a more conservative side on self-reported political ideology. A potentially competing hypothesis is that the type of threat has an effect on the strength and the direction of the effect. (2) In case of an external threat, people demonstrate more right-wing attitudes on public policies, whereas internal threats cause little or no effect, as well as on self-reported political ideology. Lastly, (3) political ideology shows an effect on threat and these two concepts are bidirectional. Considering

Motivated Reasoning perspective (Kunda, 1990), we can expect people to process information in line with their existing beliefs, so perceived threat levels are affected by their pre-existing worldviews. Previous longitudinal studies showed that perceived threat increased together with right-wing attitudes, such as authoritarianism and social dominance orientation (Onraet et al., 2014; Matthews et al., 2009) due to a more dangerous and threatening worldview. Thus, we expect to observe right-wing attitudes to predict higher threat perceptions when we look at possible bi-directional relationships.

Following a multidimensional perspective of political ideology as suggested by many scholars (Duckitt & Sibley, 2009; Crawford 2017; Morgan & Wisneski, 2017), we differentiated social and economic aspects of ideology and introduced public policies to assess various aspects of ideology. We operationalized political ideology in two domains. Firstly, the participants' opinion on some public policies , such as the governmental spending on dealing with crime, support for unemployed, etc. were considered as the indicators of social and economic aspects of political ideology. Secondly, self-reported ideology from left to right and self-reported partisan identification from democrat to republican were presented as another measurement of political ideology. In addition, we differentiated four types of threat , such as feeling tense, fear of death, financial worries, and threat to societal values.

In order to achieve the goals of the current study, we used a longitudinal data collected between April 2019 and April 2020. We analyzed the cross-lagged effects between occasion points and modeled these effects by the general cross-lagged panel model (Zyphur et al., 2019). The strengths of the current study is that longitudinal data helps us to make causal claims (Hibbing et al., 2014) and allows within-person variability in political attitudes (Morgan &

Wisneski, 2017). Additionally, the current study brought multidimensional approaches to both threat perception and political ideology which will contribute to the scientific literature.

Method

For the purpose of investigating the bidirectional relationship between threat perception and political ideology, we used a secondary, longitudinal data (Brandt et al., 2020). Year Long Longitudinal Study of Americans (2019-2020) is a one-year study conducted on US citizens once in 2 weeks for a year via Prolific. The questionnaire includes questions on political attitudes, perceived threat and anxiety, and demographic variables. From the dataset, we extracted the variables of interest to us. Threat perception was operationalized as feeling tense, fear of death, economic worries, and value threats. Participants responded to questions 'At this moment, I feel tense', 'I have an intense fear of death', 'I worry that I myself or someone from my family will be worse off financially in the near future', and 'The values in our country have gone seriously off track' on a 7-point Likert scale from *fully disagree* (1) to *fully agree* (7). Political ideology was operationalized from two different aspects, opinion on public policies and self-reported political ideology. The public policy opinions included questions on rights for gun ownership, vaccine requirements by law, controlling immigration, adoption for gay couples, improving social and economic position of black people, benefits for unemployed, abortion laws, governmental involvement in economy, healthcare benefits, aid to poor people, dealing with terrorism, dealing with crime, and government's involvement for climate change. The political ideology aspect was formed by two items, self-reported political ideology from *strongly liberal* (1) to *strongly conservative* (7) and partisan identification from *strongly democrat* (1) to *strongly republican* (7). The questionnaire also included *don't know* (8) and *haven't thought much* (9) options. For the data analysis, these answers were coded as midpoint (4) to prevent losing data.

We investigated the effect of variables of Time 1 on Time 2 and the effect of variables on Time 2 on Time 3 until Time 13. As suggested by Zyphur et al. (2019), general cross-lagged models are not suitable for datasets with less than 15 waves. Thus, we divided our 25-occasion longitudinal dataset into two subsets and conducted the models for the first 13 waves, then replicated the same model for the last 12 waves. Each model included one autoregressive term, one cross-lagged term, one moving average term, and one cross-lagged moving average terms. In other words, we created AR(1)CL(1)MA(1)CLMA(1) models.

Results

We aimed to examine the two-way relationship between perceived threat and political attitudes. Firstly, we held a data cleaning process. The missing values in policy opinions and self-reported ideology were imputed by mean substitution. The rest of the missing data were handled by full maximum likelihood during model fitting. Following the data cleaning process, we evaluated the factor structure of public policies to cumulate them in different scales. Then, we created general cross-lagged panel models for each threat and political ideology indicators.

Factor Analysis

A list of 16 public policies was presented to the subjects in the survey. The public policy scores were aggregated for each person in order to conduct an exploratory factor analysis. Promax rotation was used. Although we expected the public policies to show a two-factor structure, social and economic policies, a three-factor structure provided a better fit. Our post-hoc reasoning concluded that public policies that are related to outgroups loaded to another factor. Thus, we named the third factor outgroup policies. According to the results of exploratory factor analysis, the 5-item social policy scale consists of opinions on abortion, adoption for gay couples,

vaccination regulations, gun ownership, and government's role in climate change actions. The climate change item was included after the second wave of the study, so aggregation for this item was conducted for 24 waves. The 5-item economic policy scale consists of opinions on helping poor people, health benefits, unemployment benefits, government's role in economy, and improving the social and economic position of black people. Finally, the 4-item outgroup policy scale consists of opinions on federal spending on defense, dealing with crime, dealing with terror, and immigration regulations.

We built 16 different models for the relationship between four types of threat (feeling tense, fear of death, societal norms, and financial worries) and different aspects of political ideology (opinion on social, economic, and outgroup policies and self-reported ideology).

Model Fitting

Our aim was to create longitudinal path models for both variables which a simple example is shown in Figure B1. All models were tested by using R software, lavaan::sem. We created 16 different models for two subsets of dataset by fitting general cross-lagged models with maximum likelihood. The missing data were imputed by full maximum likelihood. Then, we evaluated chi-square test statistics ($\chi 2$), comparative fit index (CFI), Tucker–Lewis index (TLI), root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR) for goodness of fit analysis. As suggested by Hu and Bentler (1999), we used a cut-off criteria for these properties. The cut-off for RMSEA was lower than .06, for SRMR was lower than .08, for CFI and TLI were higher than .95. If the model fit parameters meet these values, we concluded a satisfactory fit. All model fit indices can be seen in Table A1.

Model1: Feeling Tense and Opinion on Social Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =384.809, p < .001, CFI = .99, TLI = .99, RMSEA =.03, SRMR = .03. Chi-square test is significant for this model, moreover CFI, TLI, RMSEA, and SRMR values show satisfactory values for a good model fit. Although we can conclude that the model provided a good fit to demonstrate the bidirectional relationship, the relationship between impulses on Time n and the cross-lagged variables on Time n+1, cross-lagged moving average terms, were not significant. Only significant path is the relationship between impulses of social policy items and social policy items in the next occasion (moving average terms). As can be seen on Figure B2, only social policy items has significant effect on the next occasion (autoregressive terms). When the same model was replicated with the last 12 waves, the model did not converge. It is important to note that one of the social policy items, climate change was included only after the second wave of the study. So, the data analysis was conducted by mean imputation for the first wave.

Model2: Feeling Tense and Opinion on Economic Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =418.035, p < .001, CFI = .99, TLI = .99, RMSEA =.03, SRMR = .03. Figure B3 shows the relationship between impulses of feeling tense and opinion on economic policies for the first 13 waves of the study. Similar to Model 1, the paths between two cross-lagged variables (cross-lagged moving average terms) were not found significant. The significant relationships were the relationship between the impulse of economic policy at time n and economic policy at time n+1 (moving average terms) and the effect of economic policy on the next economic policy item (autoregressive terms). Additionally, the covariance between impulses

at the occasion 10 was significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model3: Feeling Tense and Opinion on Outgroup Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =427.770, $p < .001$, CFI = .99, TLI = .99, RMSEA =.03, SRMR = .03. The cross-lagged effect of outgroup policies on feeling tense was found significant, $p<.05$. However, cross lagged moving average terms were not found significant. As Figure B4 shows, the impulses of outgroup policies and outgroup policies significantly affect the outgroup policies at the next occasion. Additionally, the covariance between impulses at the occasion 12 was significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model4: Feeling Tense and Self-Reported Political Ideology

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =429.560, $p < .001$, CFI = .99, TLI = .99, RMSEA =.03, SRMR = .03. As can be seen in Figure B5, autoregressive effects for political ideology items and moving average terms were found significant whereas cross-lagged terms and cross-lagged moving average terms did not show significant relationships. The other paths were not found significant, despite the appropriate fit of the model. Additionally, the covariances between impulses at the occasions 3 and 8 were significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model5: Fear of Death and Opinion on Social Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =511.033, p < .001, CFI = .98, TLI = .98, RMSEA =.04, SRMR = .03. As can be seen in Figure B6, cross-lagged moving average terms from fear of death to social policy opinions is significant. We can interpret that there is a negative, significant relationship between the impulses of fear of death and opinions on social policies in the next occasion. Also, autoregressive terms and moving average terms were found significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model6: Fear of Death and Opinion on Economic Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =545.050, p < .001, CFI = .99, TLI = .99, RMSEA =.03, SRMR = .02. As Figure B7 demonstrates, cross-lagged moving average terms from economic policies to fear of death is significant. In other words, there is a positive, significant relationship effect of economic policies on lagged fear of death. Additionally, autoregressive terms and moving average terms are significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model7: Fear of Death and Opinion on Outgroup Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =501.351, p < .001, CFI = .99, TLI = .99, RMSEA =.04, SRMR = .02. As Figure B8 demonstrates, the cross-lagged terms and cross-lagged moving average terms were not significant, rather autoregressive terms and moving average terms were found significant. Additionally, the covariances between impulses at the occasion 1, 8, and 13 were

significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model8: Fear of Death and Self-Reported Political Ideology

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =5235.027, $p < .001$, CFI = .99, TLI = .99, RMSEA =.04, SRMR = .01. Despite the satisfactory model fit, cross-lagged terms and cross-lagged moving average terms were not found significant. As can be seen in Figure B9, only moving average terms and autoregressive terms were significant. Additionally, the covariance between impulses at the occasion 4 was significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model9: Economic Worries and Opinion on Social Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =420.650, $p < .001$, CFI = .99, TLI = .99, RMSEA =.03, SRMR = .02. Cross-lagged terms and cross-lagged moving average terms did not show a significant effect whereas moving average terms and autoregressive terms were significant. Additionally, the covariances between impulses at the occasion 4, 12, and 13 were significant which can be seen in Figure B10. When the same model was replicated with the last 12 waves, the model did not converge.

Model10: Economic Worries and Opinion on Economic Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =397.883, $p < .001$, CFI = .99, TLI = .99, RMSEA =.03, SRMR = .02. As the Figure B11 shows, cross-lagged terms, cross-lagged moving average terms and

covariances were not found significant, rather moving average terms and autoregressive effects were significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model11: Economic Worries and Opinion on Outgroup Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =404.593, $p < .001$, CFI = .99, TLI = .99, RMSEA = .03, SRMR = .02. Despite the satisfactory model fit, the cross-lagged terms, cross-lagged moving average terms and covariances were not significant. As can be seen in Figure B12, moving average terms and autoregressive effects were found significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model12: Economic Worries and Self-Reported Political Ideology

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =399.643, $p < .001$, CFI = .995, TLI = .995, RMSEA =.03, SRMR = .01. The cross-lagged terms and cross-lagged moving average terms did not show a significant path, whereas autoregressive terms and moving average terms were found significant. Additionally, the covariance between impulses at the occasion 8 was found significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model13: Value Threat and Opinion on Social Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =378.389, $p < .001$, CFI = .99, RMSEA =.03, SRMR = .02. Despite the satisfactory fit, cross-lagged terms and cross-lagged moving average terms were not significant. As Figure B14 demonstrates, only moving average terms and autoregressive terms

were significant. When the same model was replicated with the last 12 waves, the model did not converge.

Model14: Value Threat and Opinion on Economic Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =429.791, $p < .001$, CFI = .99, RMSEA =.03, SRMR = .02. Cross-lagged terms and cross-lagged moving average terms did not show a significant relationship, whereas autoregressive terms and moving average terms were significant. Additionally, the covariances between impulses at the occasions 10 and 11 were significant as Figure B15 shows. When the same model was replicated with the last 12 waves, the model did not converge.

Model15: Value Threat and Opinion on Outgroup Policies

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =389.011, $p < .001$, CFI = .99, RMSEA =.03, SRMR = .02. Similar to previous models on value threat, the cross-lagged terms and cross-lagged moving average terms were not found significant. However, Figure B16 shows that autoregressive effects and moving average terms were significant. Additionally, the covariances between impulses at the occasion 5, 9, and 11 were significant. When the same model was replicated with the last 12 waves, the model converged. However, the model fit was not satisfactory, χ 2 (329) =2425.207, $p < .001$, CFI = .88, TLI = .87, RMSEA =.11, SRMR = .24. When we look at the model fit indices, we see RMSEA value higher than .06, SRMR value higher than .08, CFI and TLI values lower than .95. Figure B17 shows the model for the occasions 14 to 25. While the cross-lagged moving average terms were not significant, autoregressive terms and moving average terms were found

significant as well as the covariances between impulses at the occasions 17 and 25. To sum up, we fail to conclude a satisfactory fit for the replicated model.

Model16: Value Threat and Self-Reported Political Ideology

The path model demonstrated an appropriate fit for the first 13 waves of the data collection period, χ 2 (277) =462.840, $p < .001$, CFI = .99, TLI = .99, RMSEA =.04, SRMR = .02. Despite the satisfactory fit, the cross-lagged moving average terms were not significant. However, the cross-lagged terms from political ideology to value threat was found significant for this model, $p<.05$. As Model B18 demonstrates, moving average terms and autoregressive terms were significant as well as the covariances between impulses at the occasions 2 and 9. When the same model was replicated with the last 12 waves, the model did not converge.

Discussion

The current study contributes to the existing literature by investigating the bidirectional, causal relationship between perceived threat and political attitudes. The novelty of this study is the multidimensional approach to threat and political ideology, following the advice from previous scholars (Crawford, 2017; Morgan & Wisneski, 2017; Choma & Hodson, 2017). We investigated how threat perception and political ideology affect each other over a long period of time. Our results concluded negative cross-lagged moving average effect of fear of death on opinion on economic policies, $\beta = -.57$, $p<.001$, and positive, cross-lagged effect, $\beta = .01$, $p<.05$. Additionally, fear of death had a significant effect on cross-lagged opinion on social policies, $\beta = -.02$ $p<.01$. Considering previous which demonstrated a conservative shift in case of mortality salience (Nail et al., 2009), these results are consistent with the literature. In some of our models, the cross-lagged moving average terms were not found significant, however, the direct cross-

lagged effect was significant. For example, feeling tense and opinion on outgroup policies model showed that the direct cross-lagged effect of opinion on outgroup policies on feeling tense was positive and significant, $\beta = .10$, $p<.05$. The relationship between financial worries and opinion on economic policies also showed a significant cross-lagged effect of worries on economic policy items, $\beta = -.04$ $p<.05$, but not a significant cross-lagged moving average term. Another model showed similar patterns was value threat and political ideology. Political ideology had a negative cross-lagged effect on value threat, $\beta = -.02$, $p<.01$. In the model value threats and outgroup policies, opinion on outgroup policies also showed a significant cross-lagged effect on feeling value threat, $\beta = -.02$, $p<.05$. Overall, we can conclude that both perceived threat and political attitudes affect each other in different contexts. Fear of death has a meaningful relationship with opinions on social and economic policies, feeling tense positively predicted opinions on outgroup policies, economic worries were related to opinions on economic policies, and value threat was found linked to political ideology and opinions on outgroup policies. From these findings, only feeling tense demonstrated a liberal shift within outgroup policies and others demonstrated a conservative shift. While these findings were coherent with the existing literature, we also had some novel findings. For example, we failed to demonstrate the bidirectional relationship within a model, rather we found that the direction of the relationship differs depending on the context. On the other hand, we concluded ideological shift does not occur in some context. For example, feeling tense and financial worries had small effects or sometimes no effect on political attitudes. Also, political ideology spectrum was only related to value threat, but not other types of threat which is contradictory to the previous studies. Nevertheless, more research is needed to investigate the differences between these types of threats and motivational background of them.

We also raise the question that why all models converged for the first 13 waves, but not in the last 12 waves. The GCLM Models that we created on four different types of threat and four aspects of political ideology were analyzed with a one-year panel data. While all models converged for the first 13 waves, none of the models converged for the last 12 waves except *value threat and opinion on outgroup policies* which did not provide a satisfactory fit. We discussed that this difference might be caused by the imputation of missing values. So, we conducted a listwise deletion for cases with more than 50% missing values on public policy and threat items, then conducted model fitting again with full maximum likelihood missing data imputation for the rest of the missing values. Unfortunately, the models did not converge again. Another explanation could be the presence of a confounding in the second part of the study, for instance the rise of a global pandemic might play an important role in perceived threat and political attitudes. Thus, an empirical, confirmatory study to our findings is necessary to conclude our finding.

Our study also has some limitations. For instance, GCLM models do not include time invariant parameters, such as age, ethnicity, etc. (Hamaker et al., 2015). Therefore, our models fail to control for potential interactions of the demographic background and our variables of interest. Additionally, we used a secondary data to test our hypotheses and our study holds an exploratory characteristics. Therefore, more confirmatory and empirical research is needed to confirm our findings.

Conclusion

The current study contributes to the existing literature by showing how perceived threat and political attitudes affect each other over a long period of time. Considering the methodological and theoretical discussions within the study of political psychology, our

multidimensional approach to threat and political ideology is important features. Future research in this field should take these limitations into account and aim to approach the study of political ideology from a multidimensional, unbiased perspective.

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Appendix A

Table A1

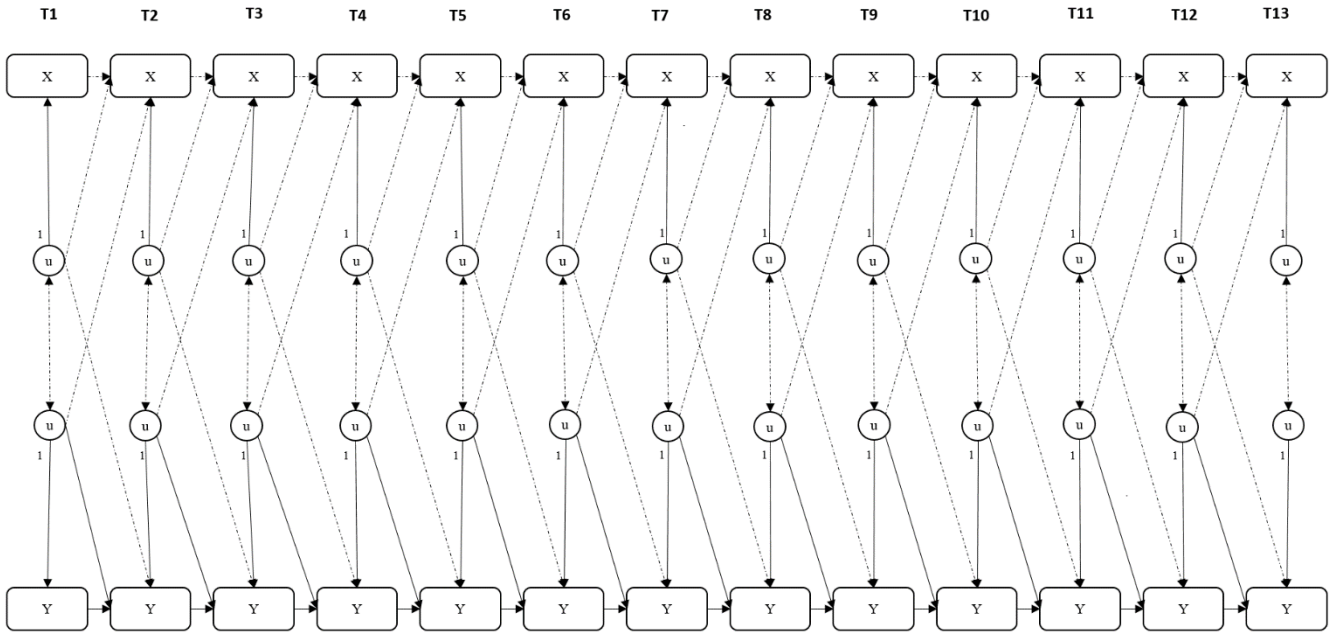
Model Fit Indices for All Models

	Model Estimates						
	$\chi 2$	CFI	TLI	RMSEA	SRMR	AIC	BIC
Tense x Social Policies (1-13)	384.809	0.989	0.987	0.027	0.029	27955.034	28386.388
Tense x Economic Policies (1-13)	418.035	0.990	0.989	0.030	0.025	28580.400	29011.755
Tense x Outgroup Policies (1-13)	427.770	0.989	0.987	0.031	0.026	30076.855	30508.210
Tense x Political Ideology (1-13)	429.560	0.993	0.992	0.032	0.026	24622.108	25053.463
Death x Social Policies (1-13)	511.033	0.984	0.981	0.039	0.025	24258.164	24689.518
Death x Economic Policies (1-13)	545.050	0.991	0.989	0.034	0.015	24915.019	25346.373
Death x Outgroup Policies (1-13)	501.351	0.988	0.986	0.038	0.017	26386.797	26818.151
Death x Political Ideology (1-13)	535.027	0.991	0.989	0.041	0.013	20965.315	21396.670
Economic Worry x Social Policies (1-13)	420.650	0.990	0.988	0.031	0.021	24170.151	24601.506
Economic Worry x Economic Policies (1-13)	397.883	0.994	0.993	0.028	0.017	24789.461	25220.816
Economic Worry x Outgroup Policies (1-13)	404.593	0.993	0.992	0.029	0.016	26344.036	26775.391
Economic Worry x Political Ideology (1-13)	399.643	0.995	0.995	0.028	0.010	20865.305	21296.660
Value Threat x Social Policies (1-13)	378.389	0.991	0.990	0.026	0.020	24.614.689	25.046.044
Value Threat x Economic Policies (1-13)	429.791	0.991	0.989	0.032	0.019	25.285.320	25.716.675
Value Threat x Outgroup Policies (1-13)	389.011	0.993	0.992	0.027	0.019	26.755.937	27.187.292
Value Threat x Outgroup Policies (14-25)	2425.207	0.884	0.867	0.107	0.240	24.845.508	25.298.431
Value Threat x Political Ideology (1-13)	462.840	0.992	0.991	0.035	0.021	21.329.599	21.760.954

Appendix B

Figure B1

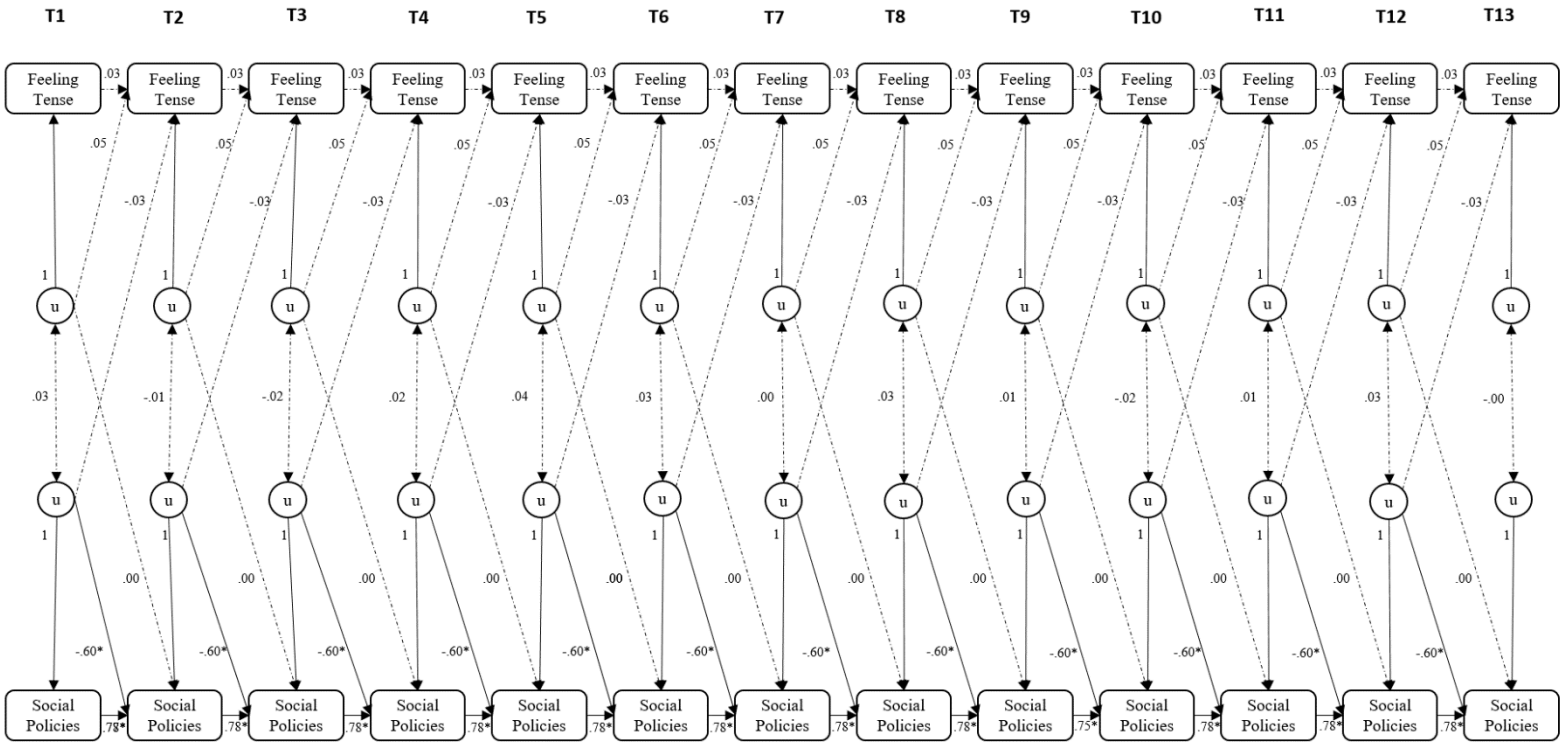
Example of General Cross-Lagged Models for 13 waves



Note. Each T point symbolizes a measurement occasion. Impulses are symbolized as u, and their cross-lagged effects as well as moving average terms are shown in the figure. The solid lines represent significant relationships while dashed lines represent insignificant relationships.

Figure B2

Feeling Tense and Opinion on Social Policies

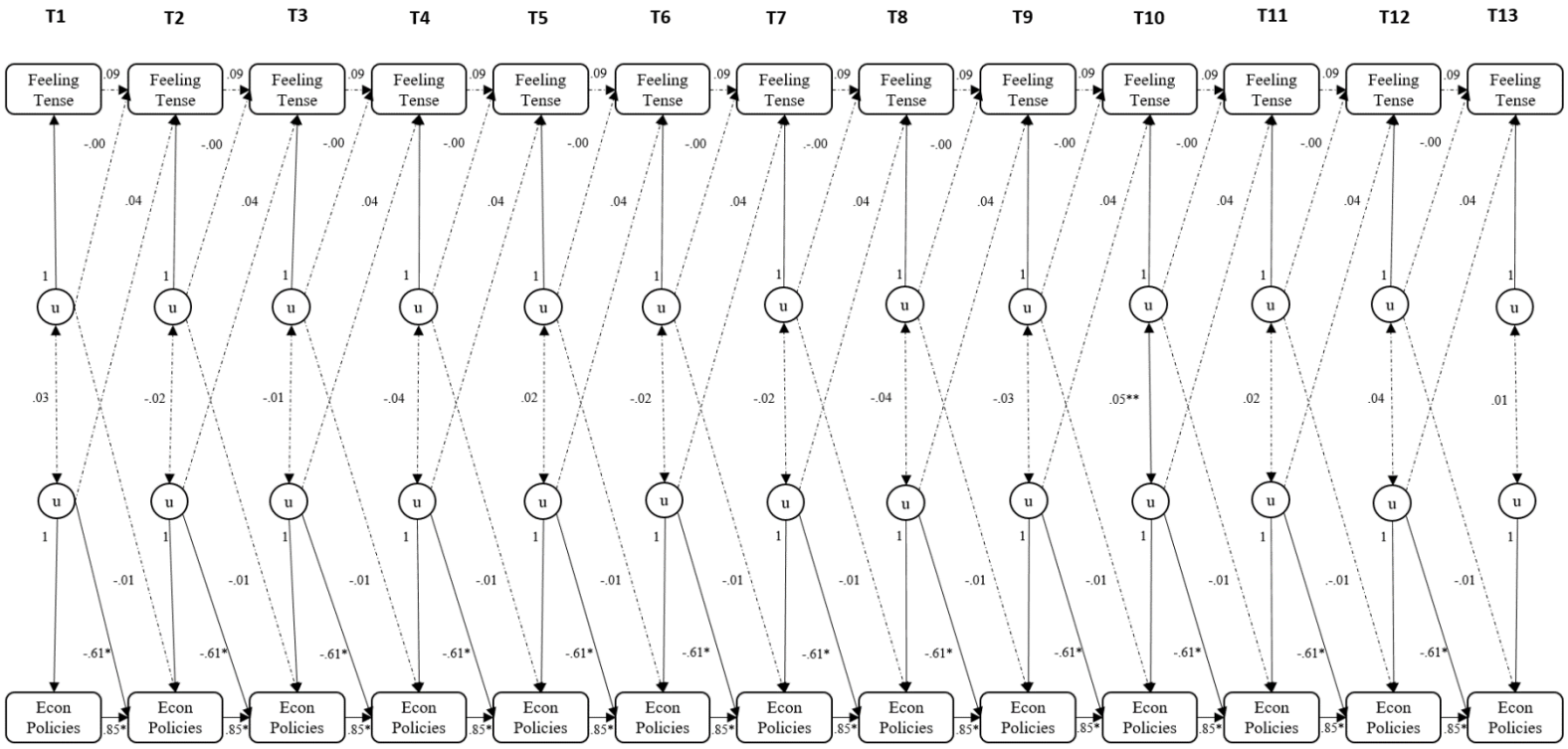


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship. The coefficients represent the standardized parameter estimates.

*p<.001, **p<.01, ***p<.05

Figure B3

Feeling Tense and Opinion on Economic Policies

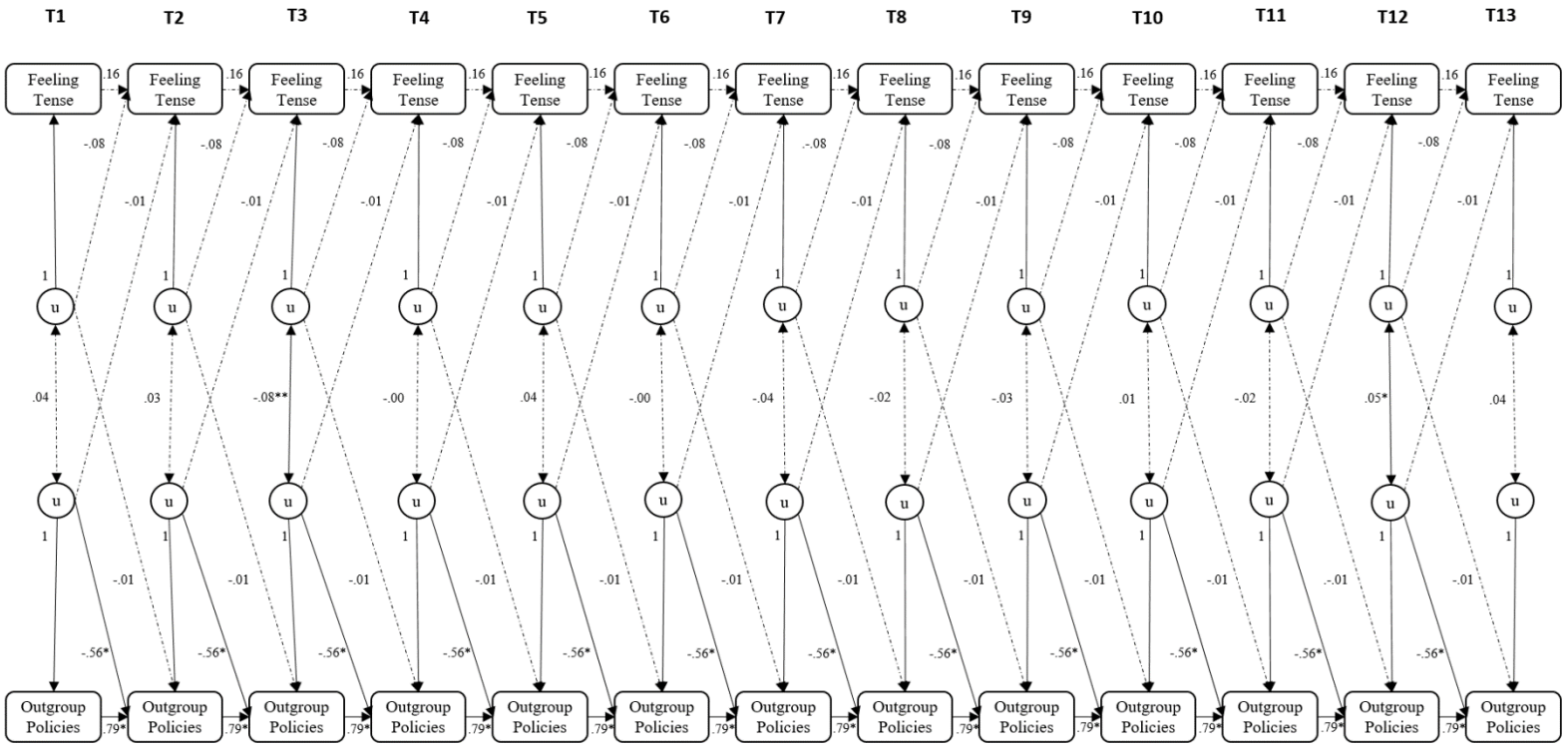


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B4

Feeling Tense and Opinion on Outgroup Policies

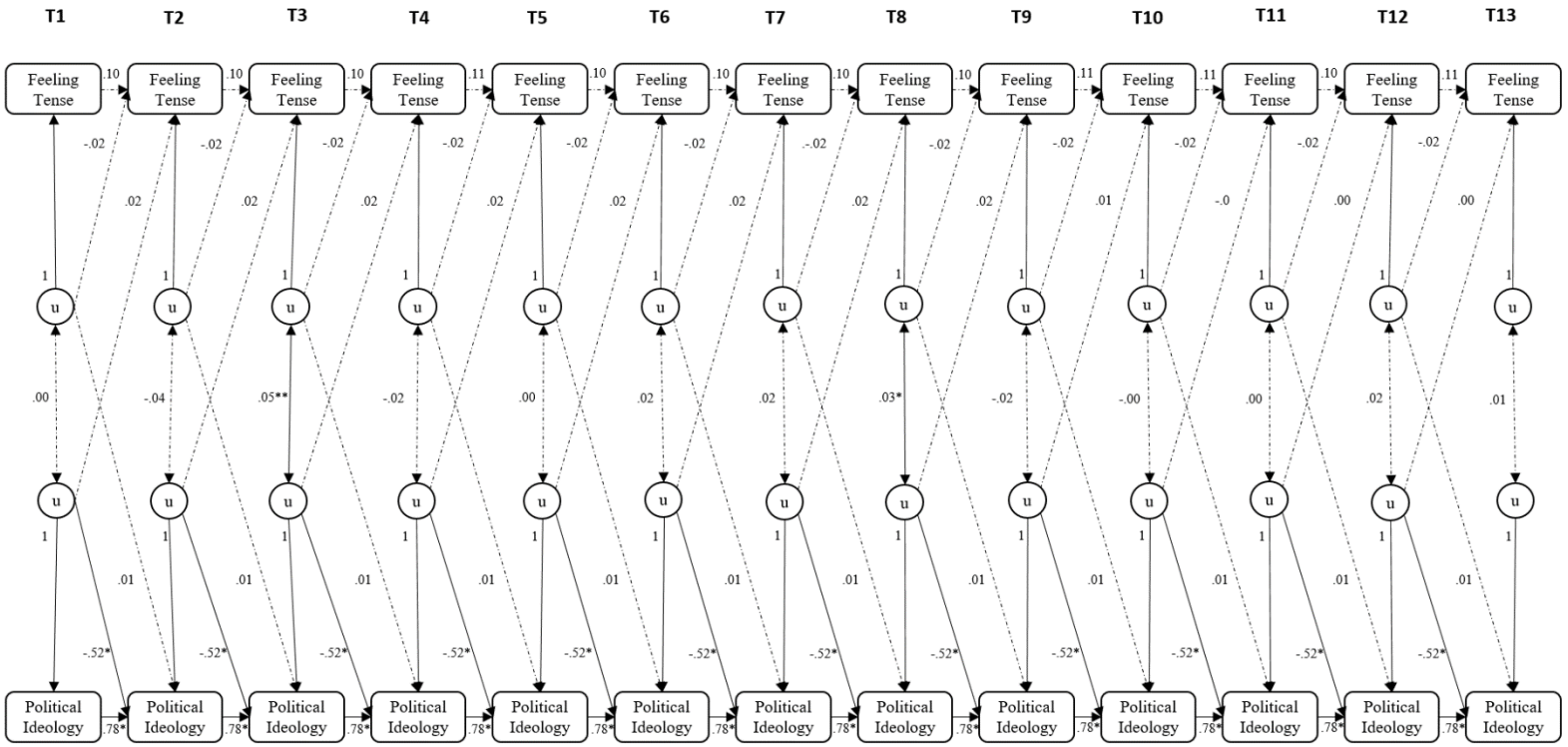


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B5

Feeling Tense and Self-Reported Political Ideology

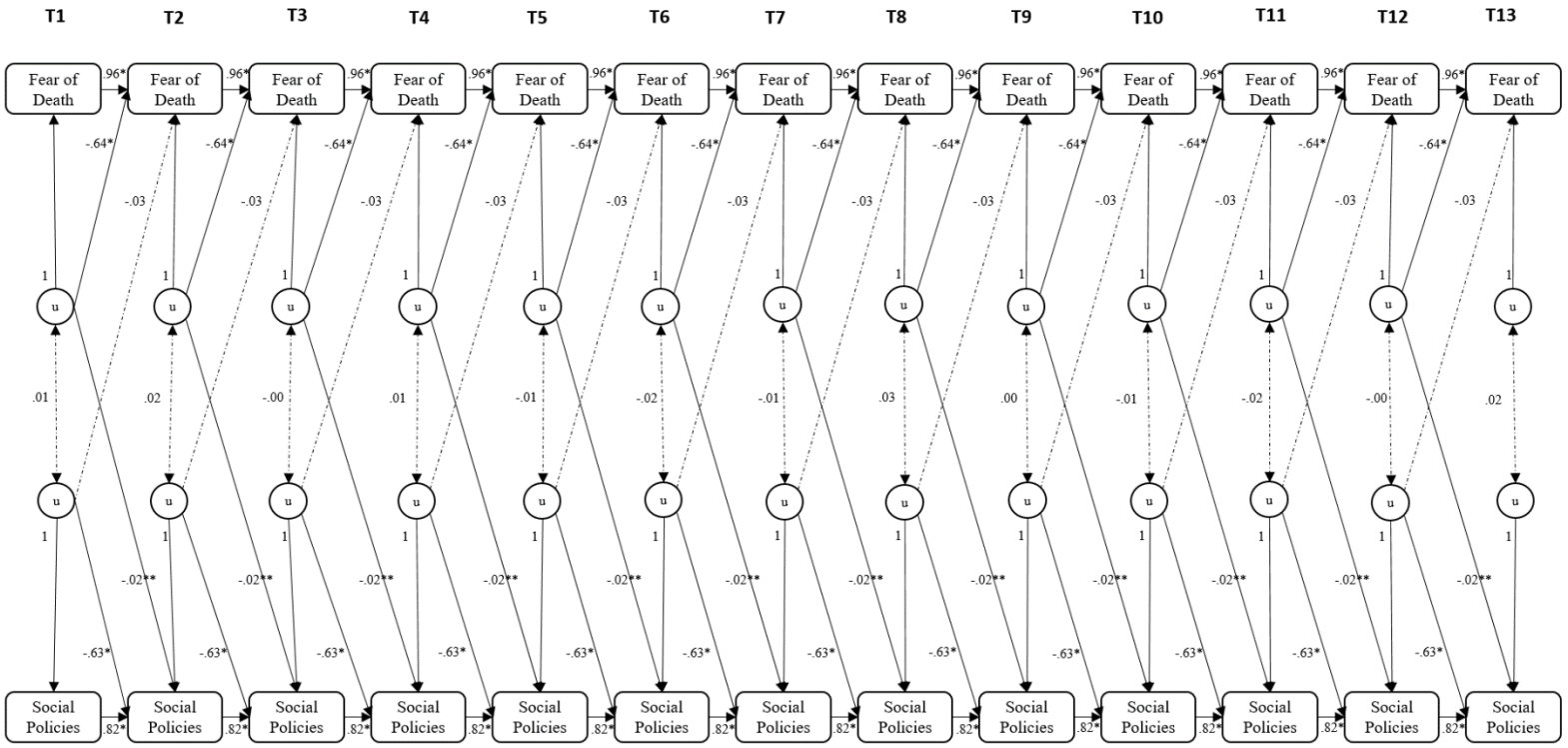


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B6

Fear of Death and Opinion on Social Policies

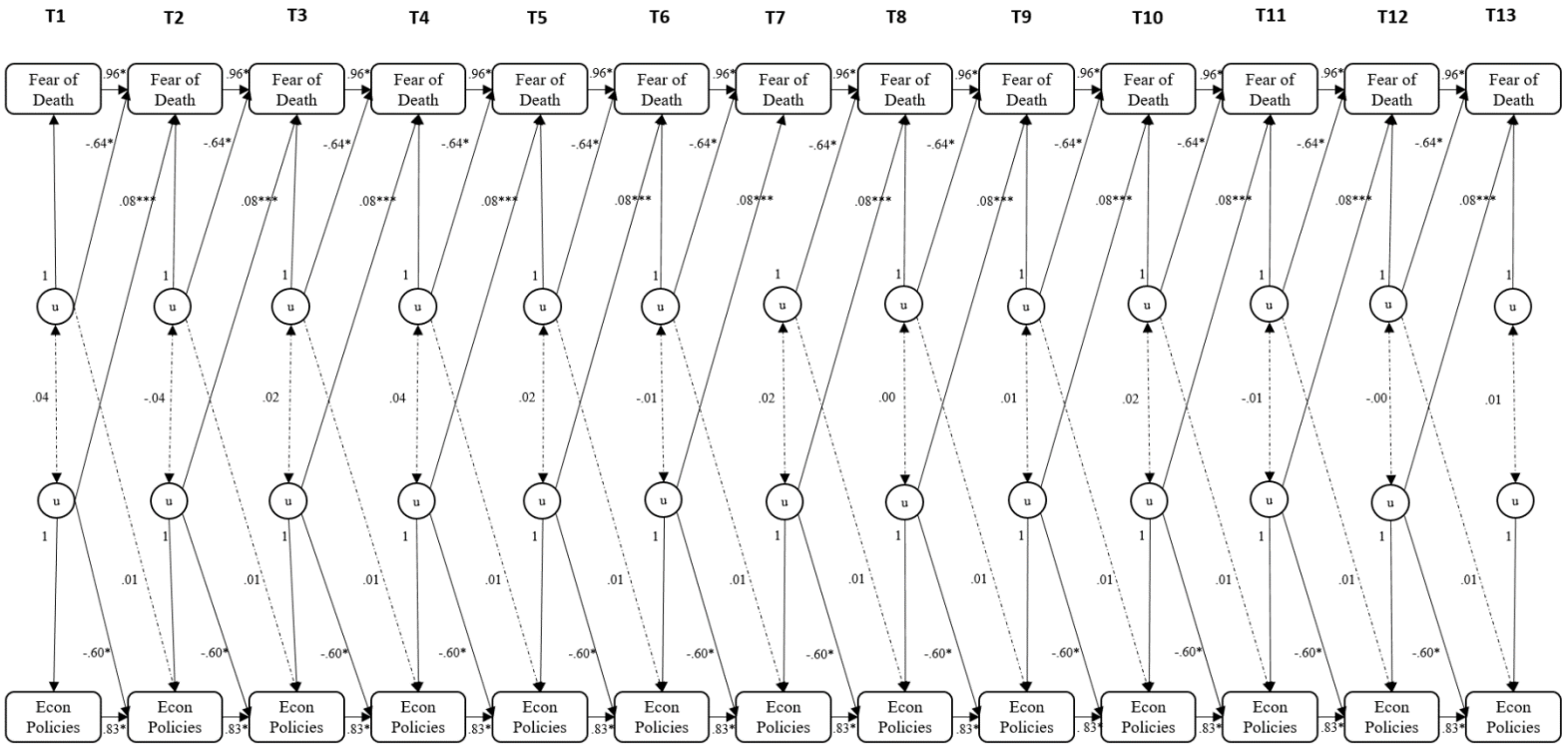


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B7

Fear of Death and Opinion on Economic Policies

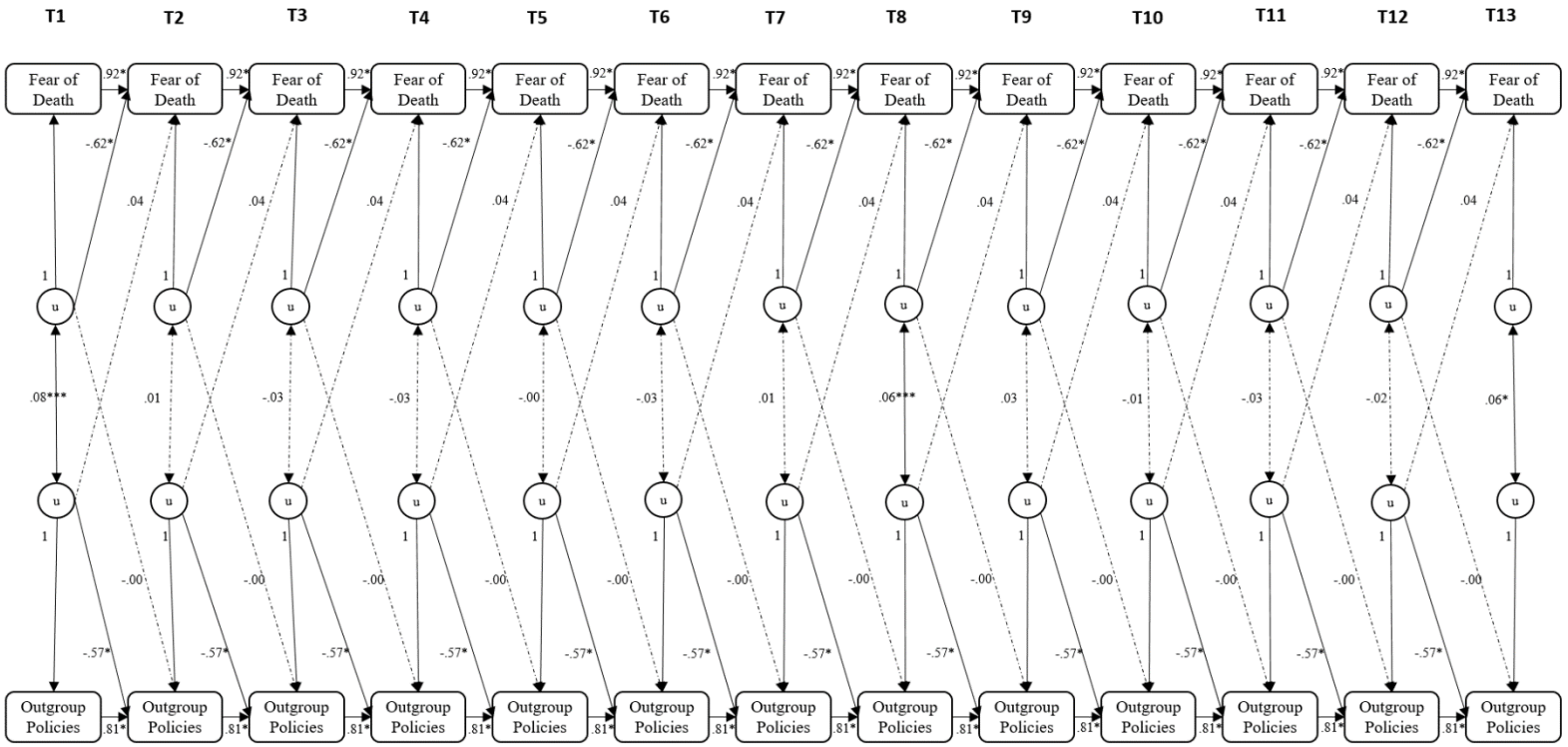


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B8

Fear of Death and Opinion on Outgroup Policies

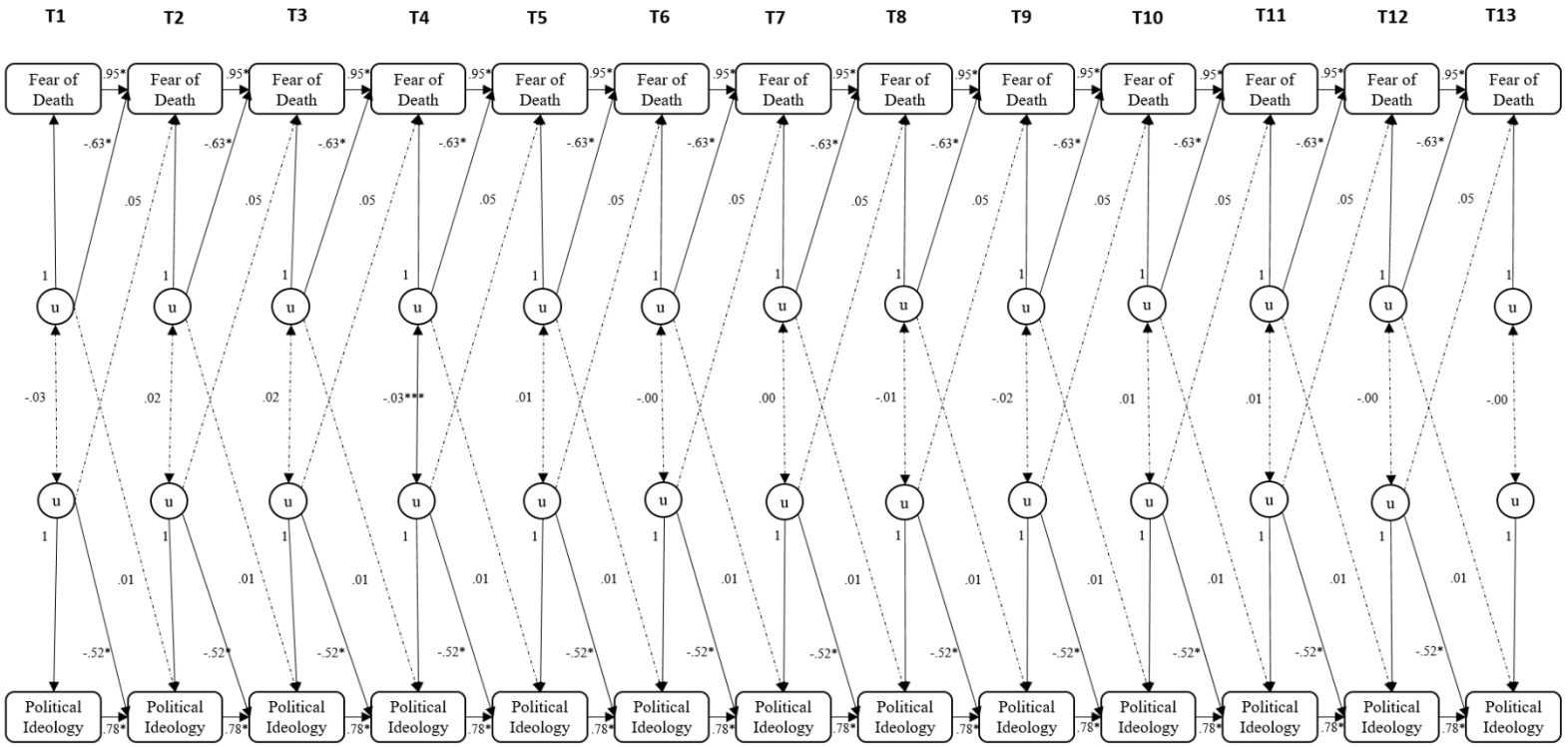


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B9

Fear of Death and Self-Reported Political Ideology

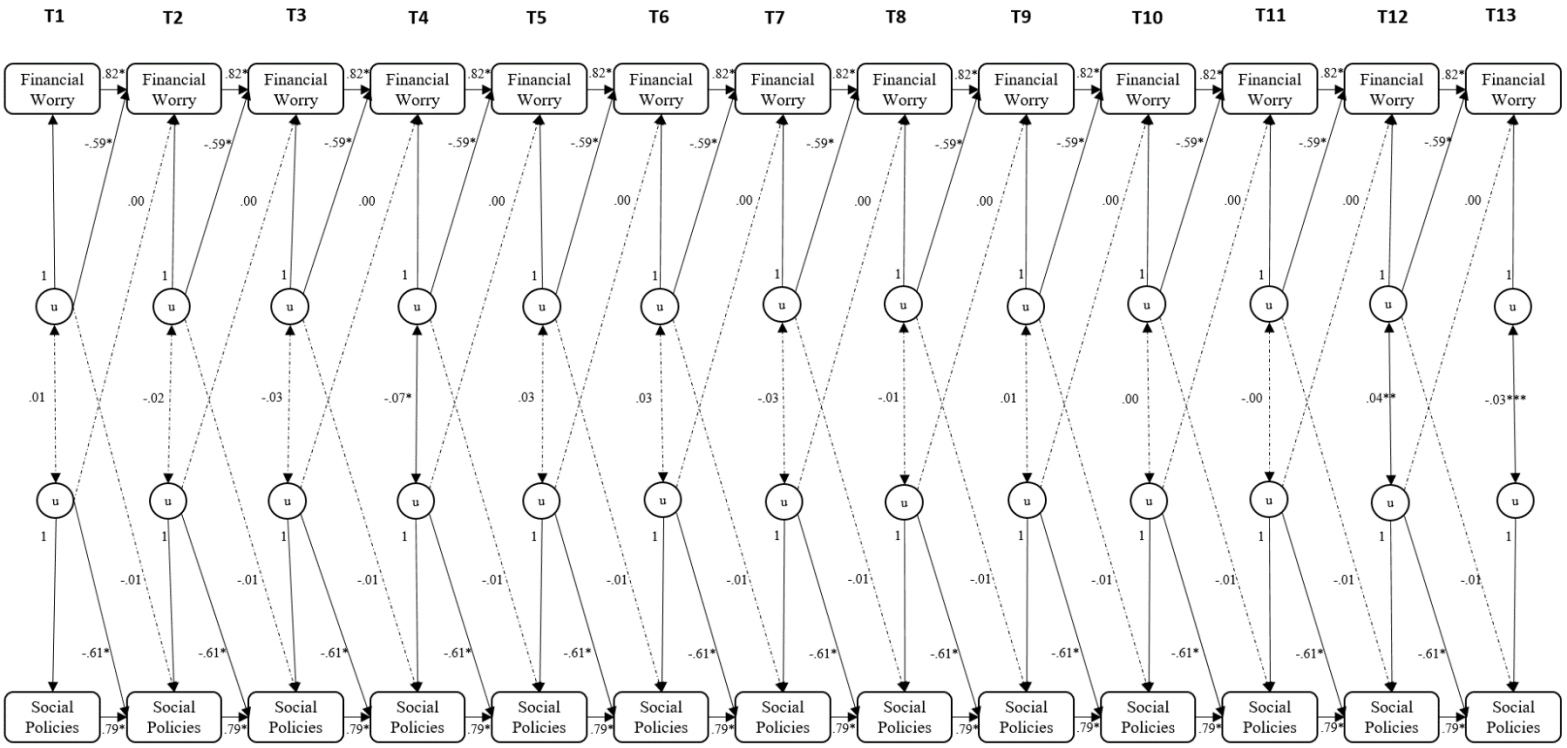


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B10

Economic Worries and Opinion on Social Policies

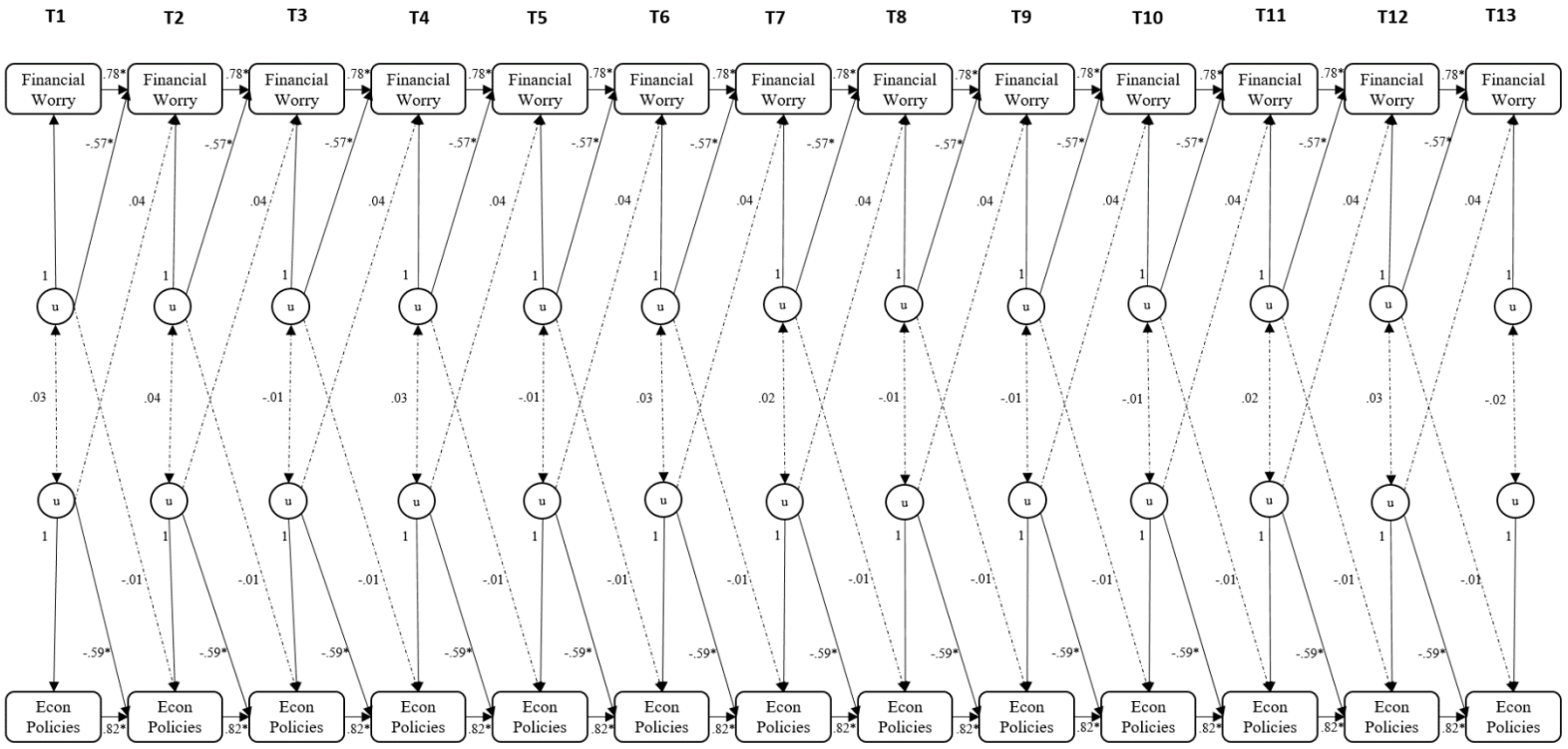


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B11

Economic Worries and Opinion on Economic Policies

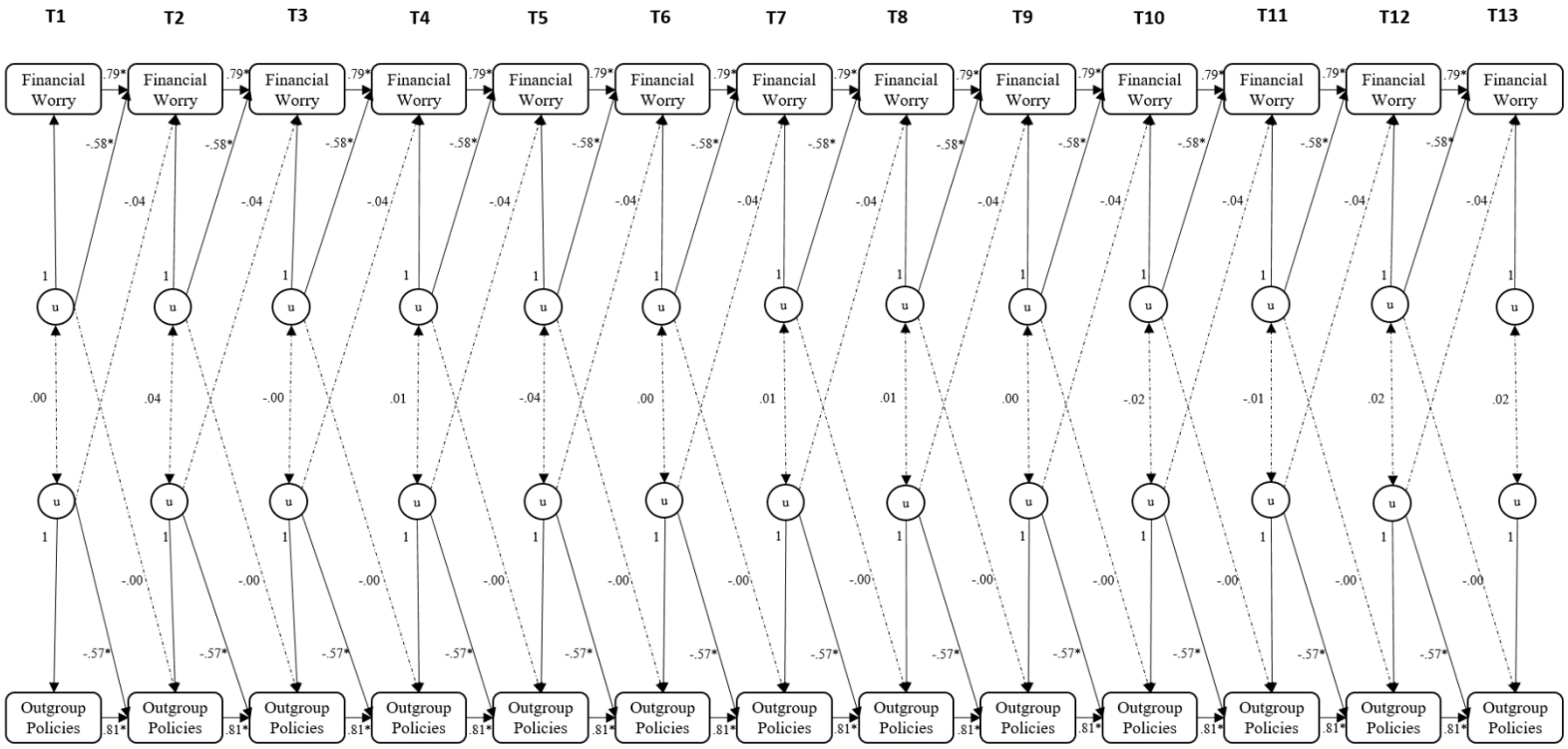


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B12

Economic Worries and Opinion on Outgroup Policies

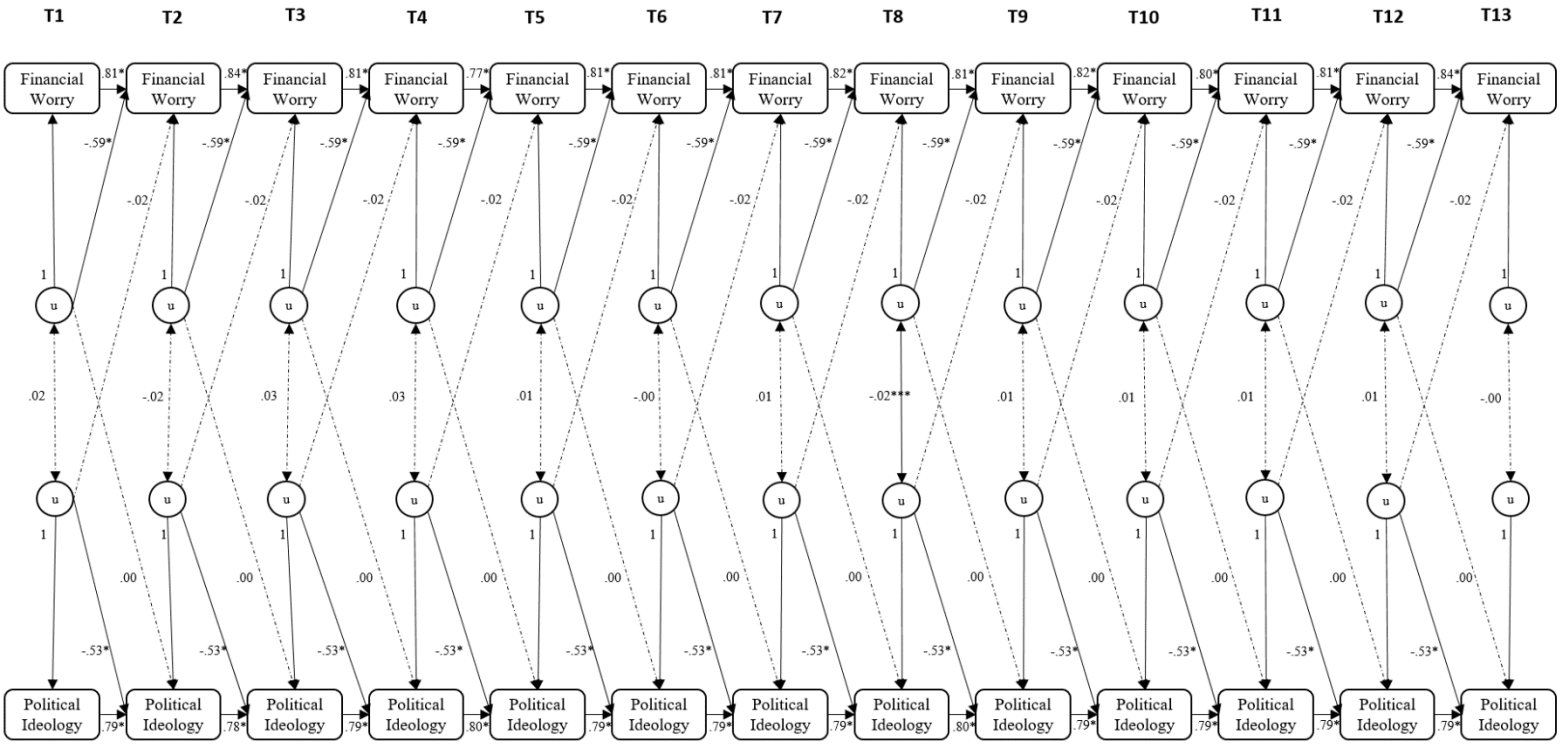


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B13

Economic Worries and Self-Reported Political Ideology

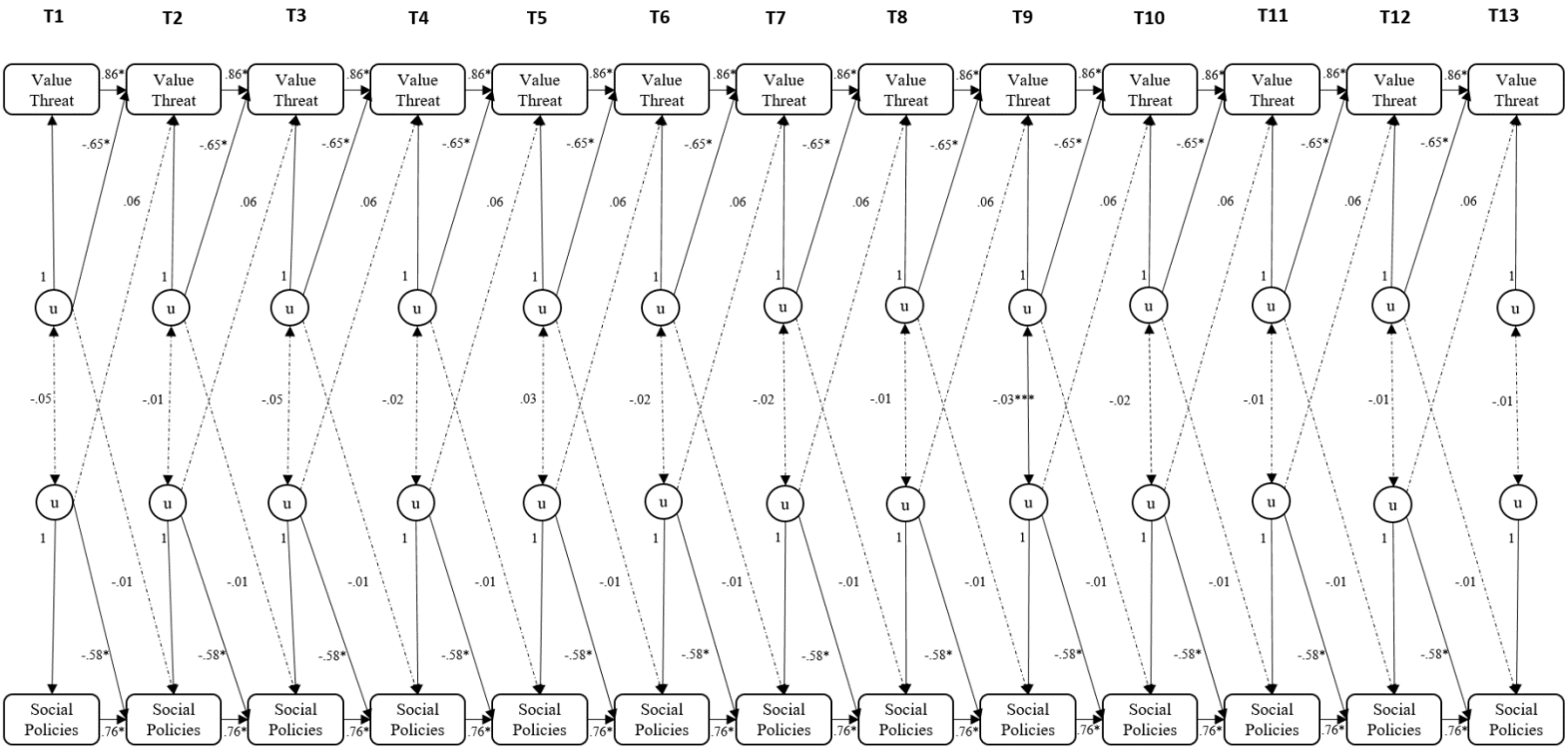


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B14

Value Threat and Opinion on Social Policies

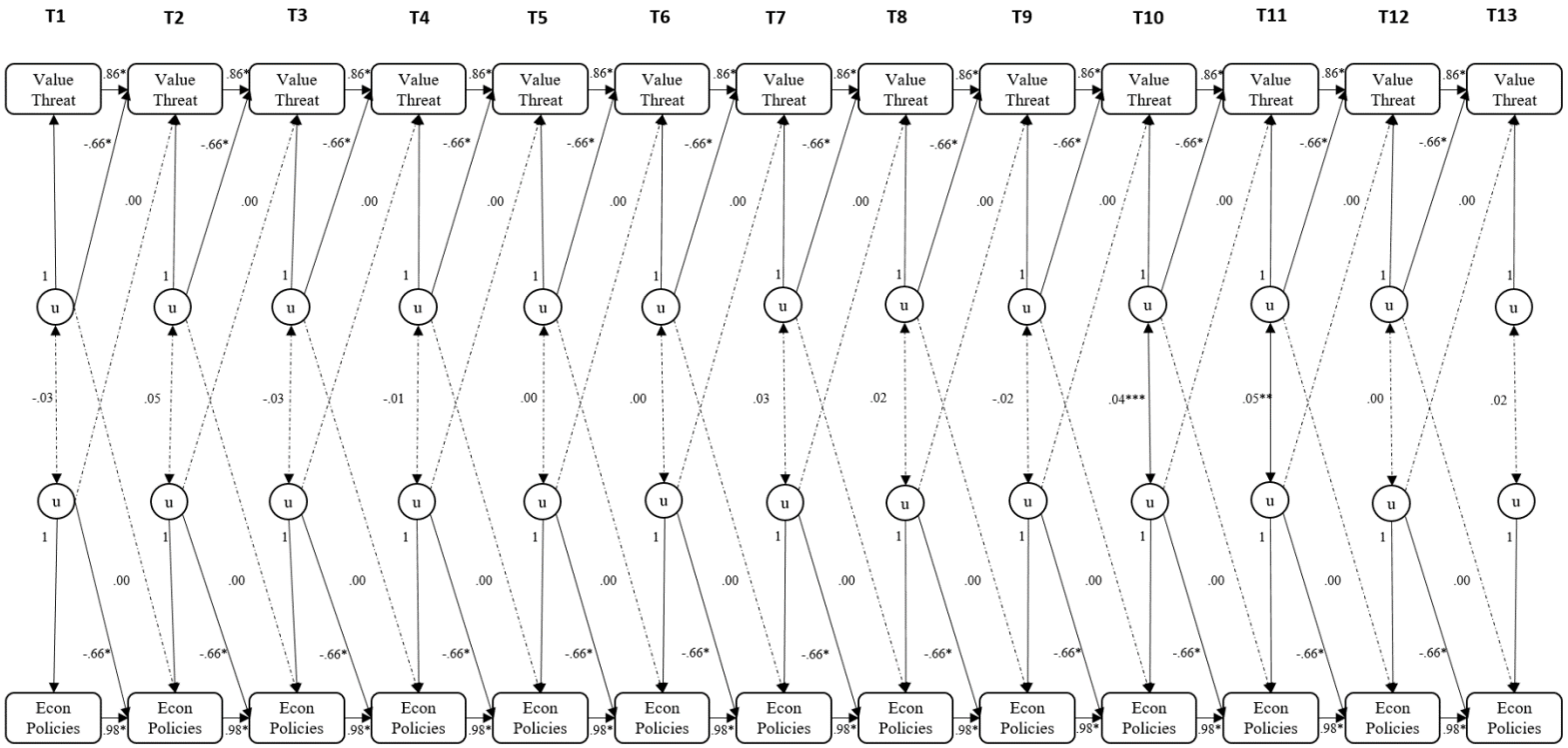


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B15

Value Threat and Opinion on Economic Policies

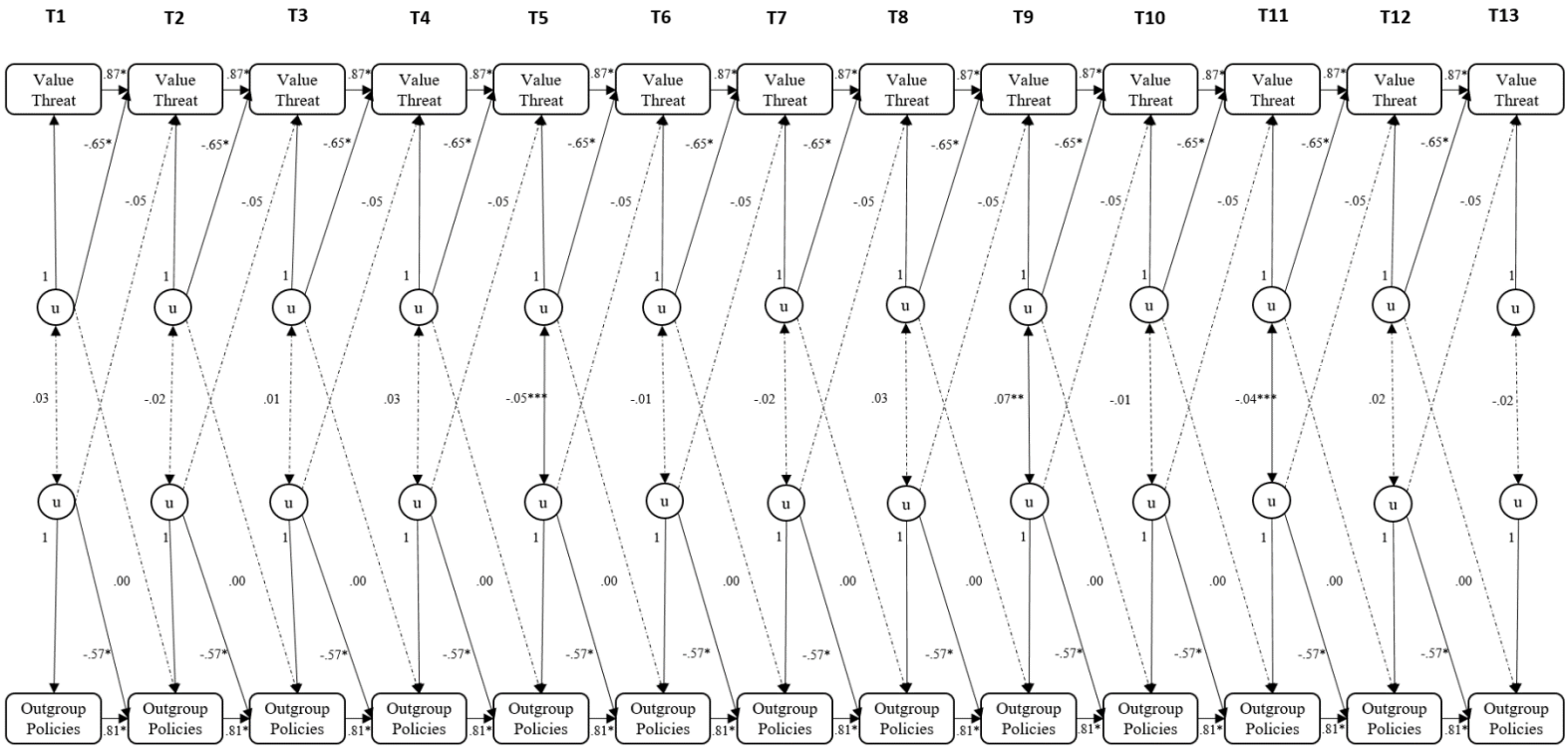


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B16

Value Threat and Opinion on Outgroup Policies (Waves 1-13)

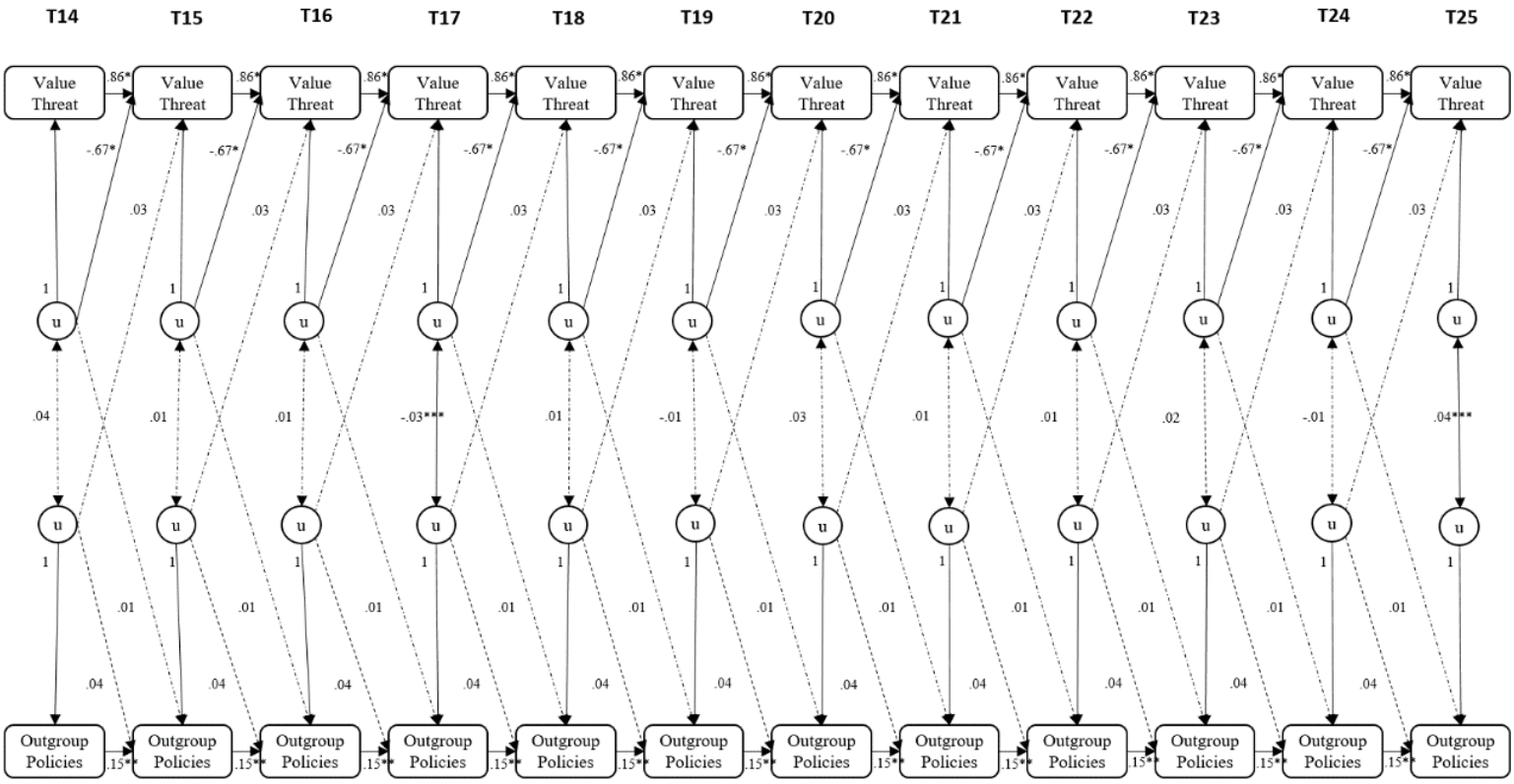


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B17

Value Threat and Opinion on Outgroup Policies (Waves 14-25)

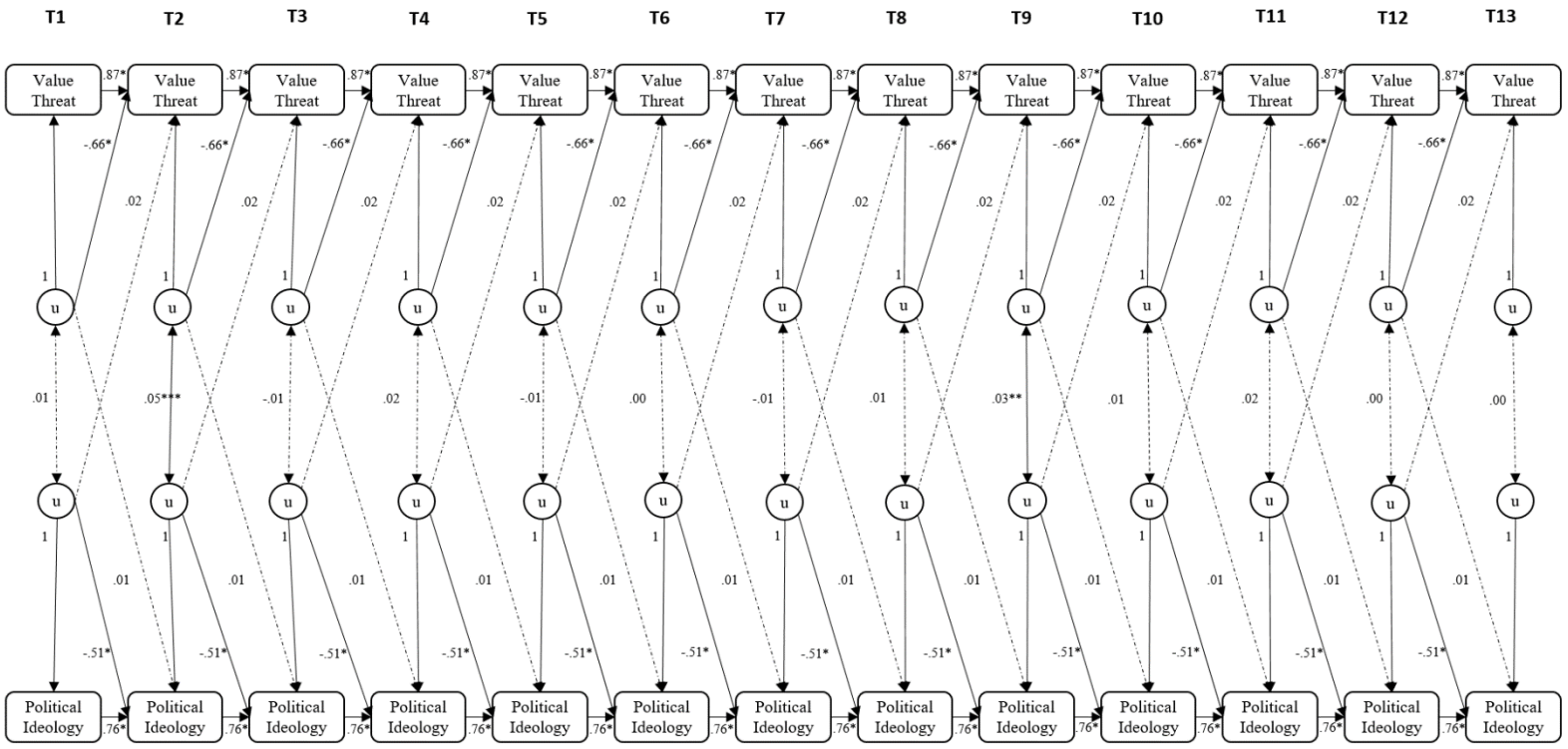


Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05

Figure B18

Value Threat and Self-Reported Political Ideology



Note. The solid path lines indicate a significant relationship, whereas the dashed lines an insignificant relationship.

*p<.001, **p<.01, ***p<.05