



SCHOOL OF
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MANAGEMENT

Closing the Gap: Understanding the Interplay of Individuals' Need for
Closure and Coping With Change

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Abstract

Due to the world becoming increasingly more ambiguous and uncertain, some concepts may consequently become more relevant when evaluating ways to cope with this change. One such concept that has historical indications of being a significant factor in people's ability to successfully cope with a changing environment is what is called the need for closure. Developed and researched by Arie W. Kruglanski, the need for closure has, despite the significant findings by Kruglanski, not been extensively researched and evaluated in the context of coping with change. This paper further investigates the relationship between need for closure and coping with change by using a survey data set with 63 Swedish participants with varying demographic characteristics. We then perform multiple regressions with the survey data set to see if there is any significant relationship between need for closure and coping with change. We find that with the parameters used in this study, the need for closure has no effect on the ability to cope with change, and we also find no evidence of a significant relationship between the two concepts. Given the findings of this paper, we discuss the limitations with the study, and potential outcomes and research.

Keywords: Need for closure, coping with change, organisational change.

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1. Introduction

Businesses are today facing new challenges relating to the fact that the world is becoming more unpredictable and the conditions of successfully coping with this are more ambiguous than previously (Sloan, 2020). The notion of studying terms such as ‘VUCA’ which means volatility, uncertainty, complexity, and ambiguity, is becoming more evident with the inability of grasping the world around us, due to the frequency of the parameters in the world being constantly changed (Kraaijenbrink, 2018). The discussion then becomes, how do we, both people and organisations, deal with these increasing changes in the world today and in the future? Traditional change management models often include several steps to handle change effectively. Most of them start by introducing the urgency and the need for change, and end by finding a new stability and equilibrium. However, if change is constant, will the traditional change management models, which require multiple time consuming steps to deal with change, still be efficient? And more importantly, how will people be able to effectively cope with constant change?

This problem of how we effectively deal with constant change becomes even more evident when looking at people's general tendency to have some form of closure, particularly in situations that are uncertain and ambiguous (Kruglanski & Webster, 1996). This line of thinking refers to the concept of individuals ‘Need for Closure’ which claims that people have a desire for certainty and decisiveness in their perceptions and judgments. It reflects a psychological tendency to seek closure or resolution in uncertain situations (Kruglanski & Webster, 1996). If the world then is becoming more uncertain and ambiguous due to change being more prevalent in our day to day operations, could people’s need for closure not then have a huge impact on our ability to successfully navigate these change processes? Would our ability to deal with change not be somewhat related to our way of also understanding people’s need for closure? In such a case, it would be useful to also understand some factors that affect people’s need for closure, and if these factors also affect someone's ability to cope with change. Therefore, the aim of this paper is to analyse the relationship between people’s need for closure and their ability to successfully cope with change. This is done through a survey study where we will analyse the relationship between these two concepts. The survey involves two different tests where the first one is developed by Kruglanski et al. (2021) and provides scores for people's need for closure. The second test was developed by Judge et al. (1999) and provides scores for people’s ability to successfully cope with change. The survey

also included demographic factors for work experience, age, gender, education level, and job status. This was done to understand which factors could have a potential impact on the need for closure and coping with change ability. The included factors were based on their previous relevance in research on change processes (Judge et al., 1999).

Although a quantitative analysis depends on making certain assumptions about both need for closure and coping with change, we still believe this gives us enough evidence to provide a generative discussion about the relationship between the two concepts. The findings of the statistical analysis will then be used as a framework for a discussion about how the need for closure and coping with change relate to each other, which could be relevant both today and in the future, considering both concepts' theoretical relevance in a more uncertain and ambiguous world.

1.1 Relevance of the Research

Understanding the relationship between need for closure and coping with change holds significant relevance for various reasons. Firstly, it provides insights into individual responses to uncertainty and disorder. Need for closure reflects a tendency to seek definitive answers and avoid ambiguity, and examining how this trait relates to coping with change helps illustrate how individuals with different cognitive styles navigate dynamic environments. Moreover, identifying any correlation, and more specifically any causality, between need for closure and coping with change can provide insights into individuals' adaptability in such situations. This insight can be crucial as it can influence the development of more effective change management strategies that accommodate varying psychological needs.

One key aspect of studying this relationship is to explore how individuals with a high need for closure cope with organisational change compared to those with a low need for closure. These insights could enable organisations to tailor their change management strategies to better fit and support individuals through the change process. Further, investigating this relationship can shed light on the effectiveness of different coping mechanisms utilised by individuals with varying levels of need for closure. Some individuals may cope with uncertainty through closure-seeking behaviours that make swift decisions with limited

information, while others may open-mindedly embrace new information and adopt more adaptive strategies such as flexibility, openness, and resilience. Understanding individuals' psychological tendencies and how that facilitates individuals' adaptation to organisational change will aid the development of tailored interventions and support structures.

In summary, this research is relevant as it addresses potential critical gaps in our understanding of how individuals and organisations can effectively manage change. Exploring the relationship between need for closure and coping with change may create valuable insights into how individuals navigate uncertainty and adapt to changing circumstances. In turn, these insights have implications for both theoretical understanding and practical interventions aimed at promoting effective coping strategies in dynamic environments.

1.2 The Purpose of the Research

The purpose of this study is to provide insights about the relationship between individuals' need for closure and ability to cope with change to better understand humans' capacity to adapt and handle change. This study will employ a quantitative approach using a questionnaire that tests individuals' need for closure and ability to cope with change. Further, the participants' responses will be analysed using regression analysis.

1.3 Empirical Research Questions

- *Is there a causality between people's ability to cope with change and their individual cognitive 'Need for Closure'?*
- *What are the most significant factors in people's ability to cope with change and their individual cognitive 'Need for Closure'?*

1.4 Outline of the Research

This deductive research has started by giving an overview of the possibility that the business environment is becoming increasingly changeable, and how it then becomes important to

understand how individuals and organisations cope with constant change. This has been followed by describing the relevancy of looking into individuals' need for closure and its relation to their ability to cope with change. Even the purpose and research questions have been stated.

Further, this study will describe the theories needed to conduct this research. A comprehensive review of existing literature will be done. Including an examination of traditional 'Lay Epistemic Theory' that addresses the process through which people gain knowledge about themselves and the world around them. This theory laid the foundations to the concept of individuals' need for closure and this framework will be further explored, focusing on its psychological implications and relevance in change management. Additionally, the review will cover theories about how individuals' cope with change, and a description about the VUCA framework. The theoretical part will be summarised by presenting previous research on the need for closure and coping with change.

The theoretical framework section is followed by the methodology and data part. As mentioned above, this study will employ a quantitative approach using a carefully designed questionnaire to assess individuals' need for closure and their ability to cope with change. The method, and questions used for this study will be carefully examined and described. Once the data has been collected, it will be analysed using regression analysis. Consequently, a description of the statistical analysis and the statistical tests used will be provided. Thereafter the study will present the results from the statistical tests and regression models. The findings from the regression analysis will be detailed, highlighting the main relationship between need for closure and the ability to cope with change. Additionally, the impact of demographic factors on this relationship will be presented.

The thesis will end by a discussion that will interpret the results and their implications. This includes comparing the findings with previous research to highlight any alignments or contrasts. Theoretical implications will be discussed to contribute to the understanding of the need for closure and change management. Thereafter, the conclusion section will summarise the main findings and their significance, acknowledge the study's limitations, and suggest directions for future research.

2. Theoretical Framework

In this section, we will present theories relevant to this research to establish a framework for evaluating cognitive aspects of human reactions to change processes. First, we will describe the Lay Epistemic Theory, which serves as the foundation for the concept of the human need for closure. We will then further define this concept to create a more concrete understanding. Next, we will outline the theoretical framework for coping with change to clarify how this concept will be used in our paper. Further, we will review previous research examining the relationship between the need for closure and coping with change. Lastly, we will introduce the term VUCA, which highlights the increasing unpredictability of the world due to constantly changing parameters, emphasising the necessity for regular adaptation to change.

2.1 Lay Epistemic Theory

The Theory of Lay Epistemics, also known as epistemology, is within psychology the research field that explores how individuals form their knowledge of themselves and their surroundings. This includes attitudes, opinions, beliefs, impressions, stereotypes, statistical inferences, and causal attributions. By identifying the common foundations of these processes, the theory integrates a wide range of social psychological research domains (Kruglanski, 1989). Essentially, the theory claims that knowledge-seeking behaviour generally follows a specific sequence known as the epistemic process. This process is divided into two main stages: problem formulation and problem resolution. In this context, the epistemic problem is seen as a collection of mutually exclusive propositions that a knower seeks to evaluate for validity. These propositions are referred to as the problem's constitutive propositions. Naturally, only one proposition among the mutually exclusive set can be deemed valid. The proposition ultimately recognized as valid becomes the resolution of the problem, resulting in new knowledge or inference on a given topic (Kruglanski, 1980). The reason for why only one proposition can be considered valid is because of their contradictory nature. When propositions are mutually exclusive, they present alternative explanations or claims that cannot simultaneously hold true. In logical terms, if one proposition is true, then the others must be false. This principal stems from the law of non-contradiction, which asserts that contradictory statements cannot both be true in the same sense at the same time (Johnstone, 1960). Similarly, in the context of the epistemic process, the constitutive propositions within the epistemic problem are mutually exclusive because they represent

competing explanations or claims about a given topic. Consequently, only one proposition among the set can be deemed valid because the truth of one proposition implies the falsity of the others. This recognition of exclusivity helps individuals in the process of problem resolution by enabling them to identify and affirm the proposition that aligns most closely with the available evidence or reasoning (Kruglanski, 1980).

Furthermore, according to the lay epistemics theory much of social behaviour, emotion, and cognition is linked to what people know or believe they know about different matters. A key component of the lay epistemic theory is its specification of conditions that lead to cognitive change or stability. The theory highlights cognitive, meta-cognitive, and motivational factors that influence these conditions. It also assumes that lay and scientific knowledge acquisition methods are fundamentally similar, suggesting that science is an extension of naive belief formation processes. Due to its broad scope, the lay epistemic theory provides an integrative framework for various social psychological research areas, such as attribution theory, cognitive consistency theories, attitudes and persuasion, social influence, social comparison, stereotyping, and biases and errors in human judgement. This broadness results in a rich array of testable implications. (Chernikova, 2024).

In conclusion, lay epistemic theory is a crucial framework within the area of social-cognitive psychology because it helps us understand the foundations of e.g., science, ethics, politics, and everyday decision-making. By exploring how we come to know things and what justifies our beliefs, epistemic theory provides a framework for evaluating the reliability and validity of information, guiding both personal and collective efforts to understand and navigate the world. Further, it is the lay epistemic theory that laid the foundation for the theory of human Need for Closure. While the theory of lay epistemic process focuses on how individuals acquire, evaluate, and use knowledge in everyday life, the need for closure represents a specific psychological tendency and motivation to seek certainty, and decisiveness. The two concepts are related in how they influence individuals' responses to uncertainty and ambiguity, particularly in the context of processing information and forming beliefs. Below the need for closure will be further explained.

2.2 Need for Closure

The concept of individuals 'Need for Closure' originated from Arie Kruglanski and social psychologist Donna Webster work in the 90s. They proposed that individuals have a psychological desire and motivation for definite answers and closure in decision-making, and cognitive processes like problem solving and social interactions. The human need for closure is a fundamental aspect of cognitive and psychological functioning, influencing how individuals perceive and interact with the world around them. At its core, this theory proposes that people seek closure to reduce uncertainty and ambiguity, and it is reflected by people's psychological tendency of finding definite and clear answers in various aspects of life. The need for closure is related to one's tolerance for ambiguity since uncertainty threatens cognitive closure. (Kruglanski & Webster, 1994).

People with a high need for closure tend to feel uncomfortable with ambiguity, uncertainty, and open-ended situations. They prefer clear solutions, and definitive conclusions, even if those conclusions are simplified or inaccurate. This desire for closure often stems from a fundamental need for structure and decisiveness and restore a sense of order and predictability to their lives. Thus, the need for closure influences various cognitive processes, such as perception, memory, and judgement. For example, individuals may perceive incomplete information as more conclusive than it is by filling in gaps to create a coherent image. They may also interpret information in a way that reinforces their already existing beliefs or biases, seeking closure by aligning the new information with their existing worldview. In decision-making, individuals with a high need for closure may prioritise reaching a swift conclusion over examining all available options. When Kruglanski and Webster (1994) tested individuals' need for closure with the amount of information requested they found that people classified with a high need for closure requested less information than those with a low need for closure. This demonstrates how individuals with a higher need for closure tend to simplify situations rather than addressing nuanced complexities before making decisions (Kruglanski & Webster, 1994). On balance, one might expect a low, negative correlation between the need for closure and uncertainty orientation yet interestingly enough, both certainty and uncertainty-oriented individuals strive to have cognitive closure. However, while the former is characterised by a close-minded stance toward new information, the latter embrace the process of accomplishing closure by open-mindedly dealing with new and inconsistent information (Kruglanski & Webster, 1994). The test used

in Kruglanski and Webster research is a framework developed by themselves consisting of 42-item. This test consists of five subscales that measure individuals: preference for order, intolerance of ambiguity, preference for predictability, closed-mindedness, and decisiveness. The test will be further described below in the methodology section.

Socially, the need for closure can affect interpersonal relationships and group dynamics. When individuals are exposed to a heightened need for closure the ability to take on a different perspective is reduced. The same happens with the ability to show empathy for a person that is dissimilar. Thus, individuals may be drawn towards like-minded individuals, seeking validation and reinforcement of their beliefs. In group settings, the desire for closure can lead to groupthink, where contradictory voices are silenced in favour of consensus, even if it means overlooking important information or alternative perspectives (Kruglanski & Fishman, 2009). Additionally, the need for closure becomes paramount under time pressure, where people have a heightened tendency to ignore and reject opinions that conflict with their own thoughts and beliefs (Roets et al., 2015). Furthermore, the inclination towards consensus might imply a reluctance to accept change. Previous research has found that groups with higher need for closure are more persistent of the norms that they initially establish than groups with lower need for closure (Kruglanski & Fishman, 2009). Similarly, this can be applied to organisational change where high need for closure can cause difficulties coping with change (Kruglanski et al., 2009).

Recently, the need for closure has been recognized as both a personal characteristic and something that can be situational, and it is noteworthy that some research has found that the need for closure arises when predictability and action is important. E.g when individuals experience time pressure due to meeting deadlines, catching the bus, avoiding being late for a meeting etc. In these cases, the absence of closure can seem costly (Bukowski et al., 2013). Hence, at the same time as the need for closure makes individuals resist change, it can also increase people's tendency to get things done (Roets et al., 2015). However, the need for closure could also be represented in the perceived benefits of achieving closure and certainty in contrast to the deemed costs of lacking closure (Kruglanski & Webster, 1994). This viewpoint would support the idea that the motivation for achieving a need for closure is a psychological mindset with multiple determining factors, some of which relate to circumstantial conditions such as time pressure or deadlines, but some who also relate to genetic origins, and personal tendencies and practices (Kruglanski & Webster, 1996). The

idea of need for closure then fits into traditional cognitive research claiming that people tend to lean towards close-mindedness over open-mindedness, relating to the intolerance of concepts such as ambiguity (Roets et al., 2015).

Moreover, when people face conflict between their beliefs, attitudes, or values, or when their actions are inconsistent with their beliefs they experience a psychological discomfort, referred to as cognitive dissonance. Cognitive dissonance theory, proposed by psychologist Leon Festinger in the 1950s, suggests that individuals are motivated to reduce this dissonance by either changing their attitudes, beliefs, or behaviours to restore consistency. This process can lead to various coping mechanisms, such as denial, justification, or avoidance, as individuals strive to maintain psychological harmony (Harmon-Jones & Mills, 2019). Research has shown that individuals' need for closure to some extent can be increased by the dissonance. When individuals with a high need for closure experience the discomfort of holding conflicting beliefs, cognitive dissonance, they might feel an increased urgency to quickly seek closure by resolving the dissonance by changing their behaviour to align with their beliefs, rationalising their actions, or modifying their beliefs to justify their behaviour, to restore cognitive harmony (Stalder, 2010).

Overall, understanding the human need for closure sheds light on how individuals make sense of the world and navigate the complexities of everyday life. However, the need for closure is multifaceted, and individuals may vary in their level of preference for closure depending on situational factors and personal characteristics. While the need for closure can provide psychological comfort and a sense of security, excessive closure-seeking behaviour can also lead to close-mindedness, and an aversion to ambiguity and uncertainty (Holmes, 2015). Change is often closely associated with uncertainty, and in an organisational setting it can have devastating effects on employees' work experience, including their attitude and performance (Cullen et al., 2014). For this reason, we believe that individuals' need for closure may be negatively related to their ability to cope with change. However, according to Holmes, people can learn how to handle uncertainty and ambiguity more effectively by recognizing this fundamental aspect, need for closure, of human psychology. We can strive to strike a balance between seeking closure and embracing the uncertainty and richness of the world around us (Holmes, 2015).

Hypothesis 1: The 'Need for Closure' is negatively correlated with individuals' ability to successfully cope with organisational change.

2.3 Coping With Change

A crucial factor in the change process is how employees cope when changes occur. Coping is generally defined as what people do when they try to minimise stress (Johnston & Johnston, 2001). More specifically, coping is “the person's cognitive and behavioural efforts to manage (reduce, minimise, or tolerate) the internal and external demands of the person-environment transaction that is appraised as taxing or exceeding the person's resources” (Folkman et al., 1986). In the context of organisational change research has shown that coping is particularly important because such transformations often bring about uncertainty, anger, stress, and conflict (Ashford, 1988).

One framework that measures the ability of coping with change was developed by Judge et al. (1999), and which hypothesised that managerial responses to change-processes can be attributed to seven traits; locus of control, generalised self-efficacy, self-esteem, positive affectivity, openness to experience, tolerance for ambiguity, and risk aversion. First, locus of control refers to the individual perception of one's ability to exercise control over the surrounding environment and is hypothesised to correlate positively with coping with change. Generalised self-efficacy is a trait which measures a person's belief in their capability to successfully deliver a goal by organising and executing and is hypothesised to correlate positively with coping with change (Judge et al., 1999). Judge et al. (1999) defines self-esteem as the maintained evaluation that one has regarding themselves, which also is hypothesised to correlate positively with coping with change. Positive affectivity involves multiple personal characteristics, but all of which are encapsulated in what is a generally a positive worldview, which also correlates positively with coping with change. Openness to experience is associated with personal characteristics such as perceptiveness, intelligence, creativity, and tolerance, which correlates positively with the ability to cope with change. Tolerance for ambiguity is a trait which generally views ambiguous scenarios as something desirable, this view correlates positively with coping with change. Lastly, risk aversion is the individual propensity to avoid situations that are more risky and is a trait that correlates negatively with coping with change (Judge et al., 1999).

These seven traits were chosen based on three criteria used to validate their use as a measurement for organisational change (Judge et al., 1999). The three criteria are: “(a) well-validated measures of the traits existed; (b) construct validity evidence existed for these traits, and they had been used successfully in previous research; and (c) there appeared to be a theoretical relationship between the trait and coping with change.” (Judge et al., 1999).

Judge et al. used the results found to develop multiple scales on coping with change. These scales include different grading variants, where this paper will utilise the six-grade scale. The six-grade scale includes the following six alternatives for participants to respond with (see Appendix B); *strongly agree, slightly agree, and agree, and strongly disagree, slightly disagree and disagree* (Judge et al., 1999). The point of the grade scale is for testing the participants ability to cope with change by providing an overall score based on their responses. The six-grade scale avoids confusing the participants by not presenting a neutral option in the survey (Judge et al., 1999).

It should be noted that quantifying people’s individual ability to cope with change is something that is extremely difficult to do (Wolfaardt, 2020). Büchel (2023) explains how there are multiple levels of change that ought to be considered when discussing dealing with change. These levels include change at the individual level, at the initiative level, at the business level, and at the organisational level. Moreover, Richard S. Lazarus's (1996) research on coping found that as people age, their coping strategies tend to shift from problem-focused, which involve actively addressing and managing stress, to emotion-focused coping, which involves managing emotional responses. This shift reflects changes in personal goals, resources, and the nature of stressors encountered at different life stages (Lazarus, 1996). Even Aldwin (1991) found this relation in her studies looking at how age impacts stress and coping mechanisms. Aldwin had a particular focus on perceived control where she found that older adults typically experience lower perceived control over stressors compared to younger adults, which influences their coping strategies. Typically, older adults shift their coping strategies towards more passive methods. These strategies are often more amid at managing their emotional response, rather than changing the stressor itself (Aldwin, 1991). Therefore, quantifying someone's ability to cope with change becomes very difficult due to the different levels presented by Büchel (2023) and peoples various coping mechanisms. All

of this aspect could be difficult to incorporate into one single test that is also not extensive to the point where people lose patience and don't complete all the questions in the tests.

For this reason, it's important for us to emphasise that the ability to 'cope with change' as described by Judge et al. (1999) doesn't necessarily take into account all of the different levels explained by Büchel. The test instead puts most focus on the individuals' traits that makes someone most capable of coping with change. This should be considered when evaluating the validity of the test for coping change and how well it captures people's ability to handle change since the success of handling change within an organisation could be attributed to other factors than the individual as explained by Büchel.

However, to provide an answer to how the need for closure relates to coping with change, it's helpful if both are quantifiable. Therefore, we must use a test which encompasses some aspects that are involved in the ability of coping with change and also prescribes this ability with a value that can be tested against the value of that person's individual need for closure. For this reason, the test developed by Judge et al. (1999) is helpful in providing individual scores on coping with change. These scores also encompass traits that are important in dealing with major changes in both career and personal experiences based on several previous research studies (Chwalisz et al., 1992; Folkman et al., 1986; Holahan & Moos, 1987; Rydell, 1966; Cable & Judge, 1994; Anderson, 1977). The survey also has historical usage in the context of need for closure (Kruglanski et al., 2007). Due to these reasons, we have chosen to use the test by Judge et al. (1999) as the framework for coping with change and providing answers to the empirical research questions, even though the findings by Büchel ought to be considered when evaluating the validity of the test.

Judge et al. (1999) created the survey by testing for the seven different traits that are common emotions relating to responses to change-processes. The traits that were sampled from a substantial pool of change management literature, were then used to develop the scale for coping with change. This was done through administering the items to different types of managers in the United States and Singapore. This larger sample of items was then reduced to the resulting 12-item scale used in this paper (see Appendix B) based on the result of a principal-component analysis and an examination of item-total correlation. This created the final framework for the 12-item scale of coping with change, which measures the concept from both the standpoint of reacting to change, and also leading change (Judge et al., 1999).

Judge et al. (1999) also found significant variance in two specific variables (job level and job performance) when developing the assessment test, where job level is relevant in the case of the test that we want to perform. Bandura (1997) also found that enhancing one's self-efficacy (one out of the seven traits) can be done through four different types of experience: enactive mastery experiences, vicarious experiences, verbal persuasion, and feedback. Analysing the variance in job level together with the findings by Bandura (1997), the next hypothesis was identified;

Hypothesis 2: Experience and job level has a positive correlation with coping with change.

2.4 Need for Closure and Coping With Change

To the best of our knowledge limited research has explored the relationship between need for closure and individuals' ability to cope with organisational change. By searching through various databases like LUBsearch and Google scholar, trying literature referring to the two concepts of need for closure and coping with change. LUBsearch is Lund University's own digital library where articles, journals, doctoral theses, and books can be found through a single search field (Lund University Libraries, 2022). Similarly, Google Scholar provides scholarly literature from academic publishers, professional societies, online repositories, universities, and other web sites. The documents on Google Scholar are ranked by weighing the full text of each document, where it was published, who it was written by, as well as how often and how recently it has been cited in other scholarly literature (Google Scholar, 2019). After carefully examining the field of previous research for the need for closure and coping with change little information was found regarding the relationship between them two. Generally, the need for closure and its relation to decision-making processes are one of the most frequently studied areas in conjunction with the concept of need for closure. Much research has been done exploring how need for closure influences individuals' perception and tolerance for uncertainty and risk, the impact of need for closure on decision quality and effectiveness, and how individuals varying degrees of need for closure affect their information processing styles, where the latter is closely related with the framework of lay epistemic theory. While decision-making is one of the primary areas of research in conjunction with the need for closure, there are other areas frequently studied. Among those

is how the need for closure relates to individuals' motivation levels, goal-setting behaviours, and persistence in achieving closure. Further, need for closure is studied in relation to attitudes, beliefs, behaviour, and social cognitions, which is closely related to our research where we study the reactance, attitudes and behaviour towards organisational change.

Additionally, coping with organisational change has been extensively studied across diverse contexts shedding light on its multifaceted nature and implications for individuals and organisations. Much research has been done regarding organisational change management, coping strategies employed by employees, managers, and organisations in response to various transformations such as mergers, restructuring, and technological advancements. Many scholars explore how coping strategies impact employees' psychological health and job satisfaction in change-induced stressors, highlighting the importance of supportive organisational environments and effective stress management practices. Researchers have also examined how leadership can play a crucial role when trying to facilitate coping with change. What these studies have in common is that they aim to understand how individuals can navigate the uncertainty and disruption connected to change and how effective coping influences organisational outcomes. However, there is limited research done that explicitly looks at the relation between need for closure and coping with change.

The most prominent study within this field of need for closure and coping with change was made by Kruglanski, Pierro, Higgins, and Capozza (2007). They conducted a series of four studies within various organisations in Italy, using both concurrent data collection methods, Studies 1, 2, and 3, and longitudinal designs, which is a research design that involves repeated observations of the same variables (e.g., people) over long periods of time (Thomas, 2023), Study 4. The findings from these studies revealed a negative correlation between need for closure and coping with change across diverse organisational settings and employee demographics (Kruglanski et al., 2007). For instance, in Study 1, conducted with nurses at a Roman hospital undergoing significant role changes (see table 1), and in Study 2, involving employees of the Italian Postal Service amidst sector privatisation, individuals' need for closure was in reverse related to coping with change (see table 2). Similarly, in Study 3, which focused on workers at the City of Rome experiencing organisational role adjustments, need for closure negatively impacted coping with change measures (see table 3). Notably, these researchers found that an interaction effect emerged between need for closure and perceived organisational support for innovation and change, indicating that the negative

relationship between need for closure and coping with change was weakened in environments where support for innovation and change was perceived as high.

Table 1: Results from Kruglanski et al. Study 1

Coping With Change as a Function of Need for Cognitive Closure and Locomotion Orientation: Results of Multiple Regression Analysis (Study 1)

	Beta	<i>p</i>
Need for cognitive closure	-.23	.012
Locomotion	.36	.000
Control variables		
Impact of change	.06	<i>ns</i>
Gender	.06	<i>ns</i>
Age	.12	<i>ns</i>

Table 2: Results from Kruglanski et al. Study 2

Coping With Change as a Function of Need for Cognitive Closure and Locomotion Orientation: Results of Multiple Regression Analysis (Study 2)

	Beta	<i>p</i>
Need for cognitive closure	-.20	.027
Locomotion	.38	.000
Control variables		
Intrinsic motivation	.21	.041
Impact of change	.01	<i>ns</i>
Gender	-.03	<i>ns</i>
Age	.01	<i>ns</i>
Education	.14	<i>ns</i>

Table 3: Results from Kruglanski et al. Study 3

Coping With Change as a Function of Need for Cognitive Closure, Locomotion Orientation, and Support for Innovation: Summary of Moderated Multiple Regression Analysis (Study 3)

	Beta	<i>p</i>
Need for cognitive closure (NCC)	-.27	.004
Locomotion	.25	.006
Support for innovation (SI)	.51	.000
NCC × SI	.21	.018
Locomotion × SI	.08	<i>ns</i>
Control variables		
Impact of change	.04	<i>ns</i>
Gender	-.04	<i>ns</i>
Age	.01	<i>ns</i>
Education	-.13	<i>ns</i>
Organizational section (back vs. front office)	-.01	<i>ns</i>

Moreover, the longitudinal design of Study 4, which assessed need for closure before and after organisational changes in the Italian Postal Service System, provided further confirmation of these findings. In this study they assessed individuals' differences in need for closure an entire month before measuring their ability to cope with change. Additionally, they measured participants' expectations about the change and how their work attitude over time shifted as a consequence of the organisational change. need for closure was found to be negatively correlated with positive expectations about change ($\beta = -0.22, p < 0.024$) and coping with change ($\beta = -0.49, p < 0.002$). However, expectations towards change and coping with change did not show any significant correlation between each other as the researchers expected ($\beta = -0.17, ns$). Furthermore, need for closure scores correlated negatively with work attitudes measured in the later phase of the study, such as organisational commitment and job satisfaction, and where coping with change scores influenced these relationships (Kruglanski et al., 2007).

In the development of Judge et al. (1999) model for coping with change they tested how the tolerance for ambiguity was related to coping with organisational change. As the tolerance for ambiguity is a subcategory of the need for closure framework this is of relevance for our research as well. Judge et al. research views tolerance for ambiguity as a dispositional trait, suggesting that individuals differ in their inherent ability to handle uncertain or ambiguous situations. It investigates how this trait impacts individuals' coping strategies when

confronted with organisational change. They hypothesised that those with higher tolerance for ambiguity are to be more capable at coping with change, given their comfort with uncertainty. The participants for this study were all employed by six organisations headquarters in four different continents, North America, Europe, Asia, and Australia. The results showed that their hypothesis was right, there was a positive correlation between individuals' tolerance for ambiguity and their ability to cope with change (Judge et al., 1999). Further, the study delves into the specific coping mechanisms employed by individuals with varying levels of tolerance for ambiguity. It suggests that individuals with high tolerance for ambiguity are more likely to employ flexible, adaptive coping strategies such as problem-solving and seeking social support. In contrast, those with low tolerance take on to more rigid, avoidant coping mechanisms (Judge et al., 1999).

What Kruglanski et al. (2007) four studies have in common is that they solely look at the connection between the concept of need for closure and coping with change at specific events where either the sample groups were about to go through organisational changes, went through change or had experienced change within the organisation they worked for. Also, the sample groups in these studies were relatively homogenous regarding their geographical position. For this reason, we believe that the connection between need for closure and coping with change is worth looking into again, and we also believe that it is of value to see if the relationship between the two concepts exists without impact from a specific event. Additionally, Judge et al. (1999) study used participants located more globally making their sample less homogeneous in regard to geographic location. However, their research does not capture the whole concept of need for closure, only the one subscale of ambiguity, hence they are missing out on the other four subscales measuring preference for order, preference for predictability, closed-mindedness, and decisiveness. Therefore, we believe that our research is relevant and an addition to their previous work.

2.5 The VUCA Framework

The idea of the world becoming more unpredictable and difficult to analyse through data is a concept that can be used to exemplify why the study of how people handle change is of importance, and what the main factors for handling change are. One concept that deals with this is 'VUCA' which is an acronym that stands for volatility, uncertainty, complexity, and

ambiguity (Wright & Wigmore, 2022). According to Wright & Wigmore (2022), the qualities of VUCA are such that it creates conditions and factors that makes a situation difficult to plan for or respond to. Improving the understanding of how to mitigate these qualities can help create better strategic abilities in a leader, and therefore, lead to better outcomes (Wright & Wigmore, 2022). Therefore, the next part will include short definitions of the four qualities to facilitate a better understanding of how they can be found in daily activities, which validates the relevancy of the research since creating clarity around what impacts these qualities could be useful if they were to occur more frequently.

Volatility is the quality of being subject to changes that are rapid, significant, and frequent, where small triggers could result in large changes. To exemplify what this quality entails one could look at a volatile market where commodities could be subject to very significant increases in price over a longer time period, and then suddenly fall in price considerably. The direction of the trends in a volatile market can also reverse promptly (Wright & Wigmore, 2022).

Uncertainty instead occurs when events and outcomes are unpredictable, where the cause and effect of these might not be well understood, and where previous experiences may not be helpful to create a better understanding around the situation. In this case, it is unclear which direction events will proceed towards. For example, in an uncertain market, it is unclear if the price will go up or down, and to what extent the price changes will fluctuate (Wright & Wigmore, 2022).

Complexity involves a multitude of issues and factors that may be intricately interconnected, and understanding the relationship between people and items can at times be difficult to do. For example, a change in one place could have unintended effects on other things in the future. To clarify, it is not always clear which factors are important in the decision-making process, and the cause and effect behind these can be very obscure and layered at times. In a complex market, the price changes in one commodity could have significant effects on other commodities that aren't directly related (Wright & Wigmore, 2022).

Ambiguity is shaped by lack of clarity and difficulty in understanding what the situation genuinely entails. Information could in these ambiguous cases be either misread or misinterpreted, since all the facts aren't necessarily clear, and the outcome or goal of the

situation may not be obvious to all parties involved. For example, in an ambiguous market information may not always be public, and unseen factors could be affecting prices (Wright & Wigmore, 2022).

3. Methodology and Data

In this part, the data and method used to conduct this research will be described. This study will employ a quantitative approach, using a survey method in the form of a questionnaire to assess individuals' need for closure and their ability to cope with change. The questions used in this survey consists of 47-items to test individuals 'Need for Closure', and a 12-item scale of 'Coping with Organisational Change', along with six control questions (see Appendix A, B and C). These cognitive tests and questions will be described and analysed to illustrate their purpose and possible limitations. Finally, the statistical tests used to analyse the collected data will be described.

3.1 Motivation of Research Method

The aim of this paper is to identify if and/or how the need for closure relates to the ability to cope with change. To collect the data needed for such analysis we decided that a quantitative approach in the form of a survey was the best methodology to use. Nonetheless a qualitative approach could have been suitable, possibly through the collection of interviews, analysing people in various situations in life; either facing change, going through change, or/and having experienced change. Still, we chose the quantitative approach even though qualitative methods can be useful when it comes to analysing social phenomena, e.g., how people cope with change, since researchers are able to explore the depth, complexity, and diversity of human experiences and behaviours within their social contexts. This is often done through open-ended questions that allows the respondents to answer in the way they prefer, and through probing techniques that enables the interviewer to clarify the interviewees story and can help drawing information out of people who are trying to avoid telling something (Sekaran & Bougie, 2016; Mind Tools Content Team, 2023). Interviews may therefore encourage participants to share detailed descriptions and insights, uncovering perspectives that quantitative methods might miss. Also, interviews can enable researchers to pick up nonverbal hints from the respondents through their body language that could be difficult to detect with other research methods (Sekaran & Bougie, 2016).

On the other hand, interviews as a research methodology come with disadvantages. One significant challenge lies in the subjectivity and potential biases of both interviewers and interviewees. Structured or semi-structured interview formats may impose the interviewer's

agenda, potentially limiting the range of responses and overlooking alternative viewpoints. Personal perspectives, assumptions, and pre-conceptions can influence the direction of the interview and the interpretation of responses, leading to errors or distortions in the data (Sekaran & Bougie, 2016). For instance, in this case, our preconceived notions about the relationship between individuals need for closure and how they cope with change, may unconsciously steer the conversation or interpret responses in a way that confirms our biases. This in turn can lead to a skewed understanding of the true nature of this relationship. Furthermore, if the participants perceive our biases, they may change their responses to align with the perceived expectations, rather than providing genuine answers. As a result, the data collected may not accurately reflect the true and complex relation between individuals' need for closure and how they cope with change, undermining the validity and reliability of the study's findings.

The biases that arise can to some extent be mitigated through the usage of a quantitative methodology. Quantitative methodologies, e.g., the collection of data through questionnaires, often involve standardised procedures, measures, and analysis techniques, which can help reduce subjective biases introduced by the researchers (Hecker & Kalpokas, 2024). Additionally, quantitative analysis relies on statistical techniques to identify and control for potential biases. Methods such as randomisation, stratification, and multivariate analysis can help account for confounding variables and minimise the effects of researcher biases on the results (Sekaran & Bougie, 2016). This type of data analysis is often more objective than qualitative analysis, as it relies on numerical data and predefined statistical procedures. This objectivity can help mitigate biases in the interpretation of results, as findings are based on empirical evidence rather than subjective interpretations (Grand Canyon University, 2023). Hence, by using quantitative methods, researchers can minimise the influence of personal biases on data collection and analysis.

However, quantitative methodologies are not immune to biases. Issues such as instrumentation bias, coming from flaws in measurement tools, and sampling bias, arising from non-representative sample selection, can still affect the validity of results. Additionally, even in quantitative analysis, there's a risk of data interpretation bias, where researchers may unintentionally skew their interpretations to align with their hypotheses or expectations (White et. al., 2022; Hecker & Kalpokas, 2024). Therefore, while quantitative methodologies offer valuable tools for reducing biases in research, researchers must remain aware

throughout the entire research process. However, transparency and awareness of potential biases, combined with the use of statistical methods and techniques, can help ensure the validity and reliability of quantitative findings. Hence, we believe that the quantitative approach to this research is the best fit.

Moreover, conducting interviews can be time-consuming since it requires investment in scheduling, conducting, transcribing, and analysing interviews, where the research must be involved in the process of collecting the data. There can also be some limitations when it comes to geographical spread of the respondents and its data (Sekaran & Bougie, 2016). When it comes to investigating the causality between the two social concepts described for this research, that are not necessarily isolated to a specific event or geographical area rather applicable to all individuals in any context, requires a large sample size. Thus, using a qualitative approach would be disadvantageous due to time constraints and geographical limitations. Biases could also arise more easily using qualitative methods since the researchers would be the ones selecting the respondents. Insights gained from interviews may be context-specific and not easily generalizable to broader populations or settings due to small, non-random, homogenous sample sizes (Hecker & Kalpokas, 2024; Sekaran & Bougie, 2016). Quantitative studies typically involve larger sample sizes compared to qualitative research, which can help mitigate the impact of individual biases. With a larger and more diverse sample, biases are less likely to influence the overall findings of the study. Therefore, a quantitative approach to this research is more favourable.

In regard to ethical considerations, such as informed consent, privacy, and confidentiality, it is essential to ensure the ethical gathering of data and protect participants' rights and well-being. Anonymity is crucial as an ethical principle since it protects the identity and privacy of research participants (Singh & Engel-Hills, 2022). When respondents of a study remain anonymous, they are more likely to provide sincere responses to questions without fear of exposure (Kang & Hwang, 2023). Generally, it's typically easier to ensure anonymity in quantitative studies. In quantitative research, structured data collection methods like surveys and the usage of questionnaires are common. Respondents provide standardised responses to predetermined questions, minimising the likelihood of disclosing personal information. Additionally, with larger sample sizes common in quantitative studies, individual responses are often aggregated and analysed at a group level, further protecting anonymity (Caldecott, 2022; Sekaran & Bougie, 2016). On the other hand, qualitative

research methods, such as interviews or focus groups, may present challenges in maintaining anonymity. These methods involve more in-depth interactions between researchers and respondents, potentially leading to the disclosure of identifiable information (UK Statistics Authority, 2022). Moreover, qualitative studies often have smaller sample sizes (Sekaran & Bougie, 2016), increasing the risk of individual respondents being identified based on their contributions or unique experiences shared in the data.

Lastly, we think that the most useful way to find the relation between individual need for closure and their ability to cope with change using a quantitative method is to investigate if there is a correlation between these items. An effective way to quantify this into data is through a correlation analysis, which is a statistical method that identifies the relationship between multiple variables, and then reveals patterns among the variables in the collected dataset (Gell, 2021). In our case, using a quantitative analysis is a useful method to try and find out if and to what extent need for closure is related to coping with change, as well as which variables that are most impactful in identifying how people's need for closure is related to their ability to cope with change.

3.2 The Construction of the Survey

The questionnaire used in this research was created online on Google Forms. In this way the questionnaire was easily distributed to many people through social networks and websites. Due to the research time constraints, and limited resources, an electronic questionnaire is the most advantageous. At the onset of the questionnaire, the respondents encountered a brief introduction outlining the purpose of the research, the researchers conducting the study, and the researchers' institutional affiliation (Sekaran & Bougie, 2016). The first questions asked in the survey involved demographic and personal information about the respondents, such as age, gender, educational level, job status, and work experience. This data is collected to characterise the sample, identifying trends and patterns, and it serves as control variables in the analysis of the regression model as it can isolate the effects of other independent variables on the outcome of interest (Sekaran & Bougie, 2016; Hünermund & Louw, 2023). We consider these demographic variables as relevant to use in the regression model as both Kruglanski et al. (2007) and Judge et al. (1999) have used some of them, such as gender, age, and educational level, in their previous studies, hence it is of interest to compare their results

with our findings. When it comes to the other variables of job status and work experience, we see them as relevant due to the fact that coping with change seems to be impacted by individuals' experience. Therefore, it might be a connection between the respondents' need for closure, experience and how well they cope with change.

Further, the survey included 59-items that tested the respondents' need for closure and how they cope with change. These questions and statements were formulated as closed questions, where the respondents had to make a choice among a set of given alternatives. By using closed questions as a method, the respondents are more likely to make quick decisions and it eases the process for the researchers to code the information for subsequent analysis. Moreover, the 59-items were randomised for each respondent in order to reduce systematic biases (Sekaran & Bougie, 2016). These 59-items will be further explained below.

3.3 The Test for Need for Closure

The questions and statements used to test individuals' need for closure originate from Kruglanski and Websters (1994) framework of 42-items. Further the test has been developed by Kruglanski, Mannetti and Pierros (2021) into a 47-item scale with an addition of five lie scores (see Appendix A). The subject is to be removed if the lie score is greater than 15. These additional five questions are included in the test to detect how truthfully the respondent has answered other parts of the test. Some lie scales feature repeated or closely similar items to check for consistency in responses. Others consist of items where certain answers might indicate a tendency towards social desirability bias or another type of response bias (Colman, 2009). For example, in this test, statements like "I have never been late for an appointment or work" or "I have never known someone I did not like" are used to indicate how truthfully the respondents answer the questionnaire.

Additionally, the test consists of five subscales that measure the dimensions of: preference for order, intolerance of ambiguity, preference for predictability, closed-mindedness, and decisiveness (see Appendix A). The scoring system for each subscale consists of ten questions to calculate participants' need for order, eight questions for the need for predictability, seven questions for their decisiveness, nine questions to test participants' intolerance of ambiguity, and eight to see how closed-minded people are. Participants were

asked to rate the items on a six-point Likert scale from 1 (*strongly disagree*) to 6 (*strongly agree*) (Kruglanski et. al., 2021). Thus, the scale does not provide a neutral option, which forces the respondents to choose a side of agreement or disagreement, and hence reducing ambiguity in interpretation of the answers (Sekaran & Bougie, 2016). The participants' responses to each individual item were thereafter added together, not including the lie scores, to calculate a composite score. Moreover, 16 of the 47-items were reverse-score items, which helps to mitigate response bias, thus enhancing the validity and reliability, and ensuring that survey measures accurately capture the constructs of interest (Kruglanski et al., 2021; Sekaran & Bougie, 2016).

While this test is a widely used tool in psychological research, it has its share of limitations that should be considered. Firstly, the Likert scale response format used may not be suitable for all individuals, potentially introducing response biases or difficulties in accurately conveying attitudes. When making surveys it's important to stay neutral and ask questions without pushing people towards a certain answer. However, John (2010) argues that with Likert items this rule frequently is broken by its very nature, since the statements are often clear and can potentially persuade people. Therefore, acquiescence bias is a common problem with Likert scales where people tend to agree with statements, no matter what they think (Johns, 2010). Another bias that might arise is social desirability bias. This means that participants may respond in a way they perceive as socially acceptable rather than reflecting their true attitudes (Chung & Monroe, 2003). For this study social desirability bias can influence responses on the 'Need for Closure Scale', impacting how individuals portray their cognitive style. Some may feel compelled to overstate their openness, presenting themselves as more flexible thinkers than they truly are. In contrast, others might downplay their need for closure to avoid being perceived negatively. This bias can lead respondents to conform to societal norms about cognitive style, adjusting their answers to align with perceived social expectations. Fear of judgement or a desire to enhance self-image can also motivate individuals to manipulate their responses, presenting themselves in a more favourable light. Consequently, social desirability bias can therefore affect the accuracy of Need for Closure Scale results by hiding their true cognitive tendencies with socially acceptable responses. Hence, the usage of an even Likert scale might not be favourable for our research as it may not reveal the true result of the participants' need for closure.

Additionally, determining the central tendency in the data can be challenging without a clear midpoint, as even Likert scales lack a natural central point. This type of scale may also make respondents feel pressured to make a choice even if they don't have a specific preference of the statement, potentially leading to less accurate responses or inflated scores. On the other hand, it is quite common when using odd Likert scales that participants do not interpret and use the midpoint of the scale in the way that the test is developed for or intended by the researchers. This leads to the possibility that the questionnaire respondents might select the midpoint option even if their true opinion is not neutral (Alhassan et al., 2022). Therefore, we consider the usage of an even Likert scale as the best fit for this research as we want the respondents to have a preferred standpoint and not just choose the neutral option to not have to express their real opinion or due to lack of engagement.

Additionally, one notable drawback of the Need for Closure Scale is its length, with 47 items potentially overwhelming participants and leading to response fatigue or incomplete surveys. There is no linear relationship between the number of questions asked and time spent answering each question. In fact, the more questions asked in the questionnaire the less time the respondents, on average, will spend answering each question (Chudoba, 2019). Regarding the scale's length, Kruglanski et al. (1997) delve into the rationale behind its comprehensive nature. The authors exemplify how each item contributes to capturing nuances of cognitive closure, thus justifying the scale's extensive coverage. Drawing from empirical studies and statistical analyses, they demonstrate how the scale's length is not arbitrary but rather essential for capturing the nature of cognitive closure effectively. With tests looking for Mean item intercorrelation and Mean item-test correlation showing how the items are related to the same concept, thus supporting the reliability and validity of the test's length (Kruglanski et al., 1997). Hence, we believe that the full length of 47-items is needed for our study to fully grasp participants' need for closure.

In Neuberg, Judice, and West (1997a) article "What the Need for Closure Scale Measures and What It Does Not: Toward Differentiating Among Related Epistemic Motives," they go even further and criticise the Need for Closure Scale on various grounds. They argue that while the Need for Closure Scale is widely used to measure the desire for cognitive closure, it falls short in capturing the full spectrum of epistemic motives. One major criticism is its limited dimensionality, and Neuberg et al. argues that the Need for Closure Scale fails the test of unidimensionality. They discovered that 'three of the facets seem highly related to each other

(Preference for Order, Preference for Predictability, and Discomfort with Ambiguity), Close-Mindedness fits less well, and Decisiveness seems greatly out of place, even correlating *negatively* with the other facets at times.’. With these findings the authors assert that the Need for Closure Scale estimates two separate dimensions: individuals desire for simple structure represented by the three closely related subscales, and a preference for certain, swift, and decisive answers measured by the Decisiveness subscale (Neuberg et al., 1997a). In defence Kruglanski et al. (1997) emphasise the Need for Closure Scale's utility as a valuable tool for measuring the desire for cognitive closure by clarifying that the Need for Closure Scale specifically targets individuals' preference for closure and certainty in cognitive processing, rather than attempting to encompass all aspects of epistemic motivation. Once again, the tests for Mean item intercorrelation and Mean item-test correlation help prove Kruglanski et al. point, and the results show that the test and its subscales are being unidimensional (Kruglanski et al., 1997). In an additional reply, Neuberg et al. (1997b) further explain their concerns regarding the dimensionality and discriminant validity of the Need for Closure Scale. They retain their belief that the Need for Closure Scale's focus on cognitive closure may oversimplify the complex cluster of epistemic motives underlying human cognition. By primarily measuring cognitive closure, the scale may overlook other important dimensions such as the desire for structure, certainty, or order in information processing (Neuberg et al, 1997b). Our assessment from this is that Neuberg et al. do not fully grasp the concept of need for closure and that it is not supposed to cover the entire cluster of epistemic motives. Thus, we believe that the test is useful and valid for the research.

Moreover, Neuberg et al. also raises concerns about the potential conflation of different motives within the Need for Closure Scale items. Some items, they argue, may inadvertently tap into concepts like certainty rather than closure, leading to ambiguity in measurement. This ambiguity complicates the interpretation of need for closure scores and may undermine the validity of the scale. Furthermore, they highlight the ambiguity in item interpretation, noting that some items on the Need for Closure Scale can be interpreted in multiple ways. This ambiguity introduces uncertainty into the measurement process and makes it challenging to discern respondents' true motivations (Neuberg et al., 1997a). Kruglanski et al. address these concerns about ambiguity in item interpretation through meticulous item analysis and validation studies, where they showcase the clarity and specificity of each item's intent. By providing concrete examples and statistical analyses, they illustrate how the scale's items are

carefully crafted to minimise ambiguity, ensuring respondents' accurate understanding and consistent interpretation. Their findings reveal that the items comprising the Need for Closure Scale are carefully designed to capture distinct aspects of cognitive closure. Statistical analyses further confirm the reliability and validity of the scale, indicating that it effectively measures individuals' tendencies toward cognitive closure without undue ambiguity (Kruglanski et al., 1997).

Additionally, Neubert et al. point out the overlap between the Need for Closure Scale and certain personality traits. A person's intolerance of ambiguity, which is a personality trait, can influence how strongly a person experiences the need for closure. Thus, this overlap suggests that variations in personality traits influence how people score on the Need for Closure Test independently of epistemic motives. This in turn will potentially confuse the interpretations of need for closure scores (Neuberg et al., 1997a). Kruglanski et al. (1997) oppose these arguments of the Need for Closure Scale overlapping with established personality traits. Through statistical analyses and comparison studies, they demonstrate how the construction of the Need for Closure Scale distinctly differs from individuals' personality traits. By identifying and isolating the influence and impact of cognitive closure on particular outcomes and/or phenomenon, they argue that they confirm the validity of the scale. Hence, they highlight the scale's ability to assess a unique cognitive process (Kruglanski et al., 1997).

While the 47-item test has its flaws, we believe that it remains a valuable tool to use in this research and to further test its validity. However, we should be mindful of its limitations and consider them when interpreting results and designing the study, thus ensuring a nuanced understanding of the need for closure and its implications.

3.4 Test for Coping With Change

The scale used to measure individuals' capability to cope with organisational change was originally developed by Timothy A. Judge and Vladimir Pucik (1998). The 12-item scale (see Appendix B) measures coping with change by considering both peoples reactance to change (e.g. Rapid change is something to adapt to, but not to embrace) and facility of adaptation to change, also referred to as leading change (e.g. When dramatic changes happen in this organisation, I feel I handle them with ease) (Judge et al., 1999; Kruglanski et al., 2007).

Even for this test the participants were asked to rate the items on a 6-point 'even' Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). For this test, 3 of the 12-items were reverse-scores, item 3, 4, and 6. Further, the 12-items were summed to compute an overall measure of coping with change. High scores on the scale imply a subjective perception of adeptness in managing organisational change (Judge et al., 1999; Kruglanski et al., 2007).

One of the primary strengths of the 12-item scale is its comprehensive assessment capability. It covers a range of attitudes and behaviours related to change, providing a holistic view of an individual's readiness and coping mechanisms (Judge et al., 1999). Additionally, the scale has undergone rigorous empirical validation, demonstrating its reliability and validity in various studies, which gives researchers and practitioners confidence in its utility. For this reason, Kruglanski et al. (2007) are arguing that the 'Coping With Organisational Change Scale' is a valid measure for assessing individuals' subjective experiences and reactions to organisational change. The scale has been widely recognized and accepted within the field of coping behaviour and therefore they used it in their study. Since experiences and reactions to change are commonly evaluated using measures of coping with change in the organisational change literature, the researchers opted for a scale specifically designed for this purpose. As mentioned above, the Coping with Organisational Change Scale includes items that capture both reactance to change and the facility of adaptation to change. This comprehensive approach allows for a nuanced assessment of individuals' coping responses, encompassing both the stress and ease associated with organisational changes (Kruglanski et al., 2007). However, the moderate Cronbach's alpha reported for the scale, 0.66, indicating a pretty low level of internal consistency, meaning that the set of items used in the scale are not fully measuring the same underlying construct (UCLA, 2021). Despite this, Kruglanski et al. considered the scale as valid due to its inclusion of relevant items and alignment with the study's objectives.

Moreover, an advantage with the Coping with Change Scale is its broad applicability. It can be used across different industries and organisational contexts, making it a flexible tool to use within various contexts (Judge et al., 1999). However, since our research is not based on a specific event, context, or organisation, some of the questions and statements in this test were slightly rephrased. Instead of asking about "this company" the respondents were asked about the changes happening "within their current or previous organisation". This was done so that the respondents could more easily understand the statements, since asking about "this

company” could be perceived as confusing as we are not investigating or referring to a specific company.

Additionally, there are some limitations to the scale. One limitation is that the scale captures just a small period in time and may not fully account for how an individual's coping mechanisms and readiness for change evolve over time or in response to different types of changes. This is due to the phrasing of only asking about the changes happening within a specific organisation, often leading the respondents to think about one specific event (Sekaran & Bougie, 2016). This is another reason for why the rephrasing mentioned above was done. The respondents may not have experienced a change within the organisation that they are currently working for, or they might have experienced changes happening before within the company or in previous organisations differently than they do now. By asking about the respondents “current or previous organisations” enables them to apply their personal experience into a wider context, offering the research insights that may be more broadly applicable.

Furthermore, even for this test, as for the Need for Closure Scale, there is a possibility that the usage of the Likert scale may cause acquiescence bias, where people agree with the statements regardless of their own beliefs (Johns, 2010). Another issue with the scale is the potential for self-report bias. As with many self-report measures, respondents might provide answers they perceive as favourable rather than their true feelings and thoughts, which can affect the accuracy of the results (Bound et al., 2001). These potential biases are something that we keep in mind while discussing the results.

3.5 Numerical Coding of the Data

After we have received responses to our survey, we will download the data from Google Forms to an Excel file. In Excel we will further do a numerical coding of the data. For the 47-item and 12-item tests scales we will code the data as the two tests requires where e.g., strongly disagree will equal 1, and strongly agree will equal 6. We will also take the reversed scores into account where strongly disagree will equal 6 and strongly agree equal 1. Moreover, for the need for closure measurement tool (the 47-item scale) we will consider the five lie items and add these together to formulate the lie score. Those participants whose lie

score is greater than 15 will be removed from the regression analysis. Thereafter, both the need for closure score and coping with change score will be summed. The control variables will be numerical coded as shown in Appendix C.

3.6 Statistical Analysis

When conducting a statistical analysis with survey data, there are a few general steps that are useful to follow in the process. In this research method we started by plotting histograms and scatter plots (see Appendix D-L) to understand the relationship and distribution between the different variables that were chosen for this experiment (Torres-Reyna, 2007); coping with change, and need for closure, as well as age, gender, educational level, job status, and work experience as our control variables. To answer our research questions, we wanted to understand to what extent these different variables correlated with each other to be able to discuss these results against the previous findings of Kruglanski.

To analyse the correlation between the variables presented, we conducted multiple regression models with the econometric tool Stata which would provide results for our research questions, but also allow for testing of our hypotheses as presented in the theoretical framework (Torres-Reyna, 2007). To test our first hypothesis which suggested that there was a negative correlation between the need for closure and ability to cope with change, we had to perform a linear regression to see if this relationship corresponded to our findings. The linear regression would also provide an answer to our second hypothesis, suggesting that the two variables had a positive correlation with coping with change. For the linear regression, we used the data collected from the 63 participants that responded to the questionnaire, and used coping with change as the dependent variable, and the need for closure and control variables as the independent variables.

To provide answers to our second research question, regarding which demographic variables that would be the most impactful on both need for closure, and coping with change, we also performed a second linear regression with need for closure as the dependent variables and coping with change and the control variables as the independent variables. For this linear regression, we also used the same dataset based on the 63 participants that responded to our questionnaire.

Based on the scattered result shown in the scatter plot (see Appendix D) of the independent and the dependent variable in the linear regression models between the two concepts of ability to cope with change, and need for closure, we also decided to test the results with a non-linear regression model. The reason for testing with a non-linear regression is that the relationship between two variables isn't always linear as the linear regression model would assume (Mowers et al., 2023). Therefore, the trendline in a linear regression will only fit linear values (Kumar, 2020). In the case of our dataset, as we specifically wanted to evaluate the relationship between coping with change and the need for closure, we added a squared term of need for closure as the independent variable since this would provide us with a parabolic trendline, rather than a linear trendline (Kumar, 2020). For this non-linear regression, we used the same dataset as in the previous two linear regressions. However, as stated before, now we also added a squared variable of need for closure to analyse what effects this would possibly have on coping with change, since we assumed based on the scatter plot graph, that there might be a non-linear relationship between the two variables.

3.7 Statistical Tests

To be able to discuss the reliability of the results found in the regressions, it's crucial to perform statistical tests that can test for problems such as differences in variance in population and heteroscedasticity (Williams, 2015; Xia, 2020). When conducting our tests with a regression model, we used an OLS model with random effects between the dependent variable and the independent variable. For the tests we used 'need for closure' as the dependent variable in one regression where 'coping with change' along with the control variables were used as independent variables. We also performed an OLS model where coping with change was used as the dependent variable and need for closure along with the control variables were used as the independent variables. Lastly, we also perform a non-parametric test with coping with change as the dependent variable and need for closure along with the control variables as the independent variables. The reason why these tests were performed was to check for falsification of our hypotheses, and then help answer our empirical research questions. The following section will include the tests performed and their results.

Firstly, we used the nonparametric Wilcoxon rank-sum test to compare whether the sampled groups derive from the same population and whether the distribution is the same for their data. This means, checking whether the groups are drawn from populations with different variables of interest. The null hypothesis for the Wilcoxon rank-sum test is that the two populations are equal, and the alternative hypothesis is that the two populations are not equal (McClenaghan, 2022). The reason for using the Wilcoxon rank-sum test in a survey analysis is that the data collected is usually assumed to not be normally distributed (Pizur, 2022). For the results of our survey, we could reject the null hypothesis that the two populations, male and female, were equal, $p(z > -2.023) = 0.043$.

Secondly, we conducted the Breusch-Pagan test for heteroscedasticity. From the test, we discovered that the error terms did not have a constant variance and that we had heteroscedasticity in the regression (Williams, 2020). Therefore, we had to correct for this finding by using robust standard errors for our results to be efficient. The reason for using robust standard errors is that OLS assumes that the error terms are both identically and independently distributed. By using robust standard errors, the result can be more trustworthy since it relaxes either one, or both assumptions, and controls for biased standard errors caused by heteroscedasticity (Williams, 2020).

4. Research Results

In this section, we will characterise the sample and its limitations. Thereafter, we will outline the regression models utilised for analysing the survey results and present the findings from the regression analysis. Our focus will be on determining if there exists a significant correlation between individuals' need for closure and their capacity to cope with organisational change. Additionally, we will explore the relationship between the control variables and both the independent and dependent variables.

4.1 Description of the Sample and its Limitations

The participants in this research consisted of people from various organisations located in Sweden. Initially our sample consisted of 76 participants, however 13 of the respondents' lie scores from the need for closure test, added up to greater than 15. Hence those respondents' answers were considered invalid and removed from the regression analysis. The purpose of the lie score has been further explained above in section 3.3. To distinguish how mixed our sample was, these demographic questions were helpful. In regards to the participants' differences in age, educational level, job experience, job status and number of organisations worked for, we draw the conclusion that the sample to some extent was homogenous. The mean age of our sample is 39.07 years with ages ranging from 20 to 63 years. The sample was also relatively evenly divided between women and men, consisting of 60% women and 40% men. Below the other demographic items are shown in pie charts.

Figure 1: Educational Level

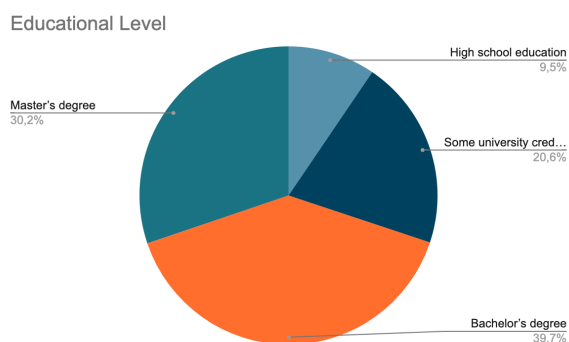


Figure 2: Job Experience (in years)

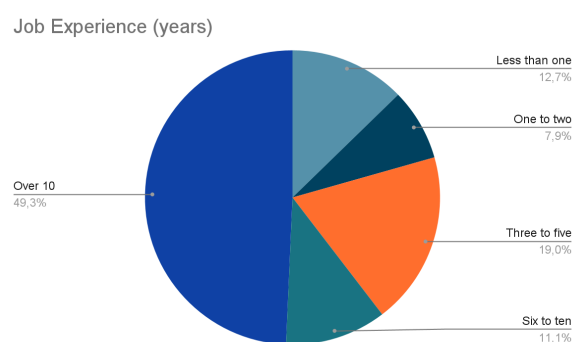


Figure 3: Job Status

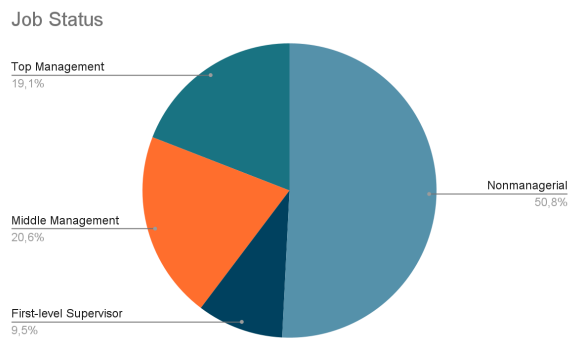
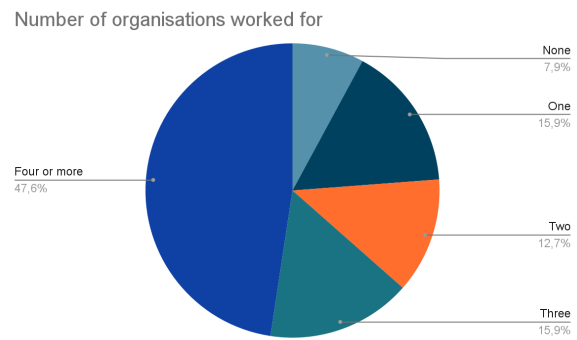


Figure 4: Number of Previous Organisations



The majority of our sample seems to have a lot of work experience (see Figure 2), along with experience of working within many organisations (see Figure 4). Moreover, most of the participants seem to be highly educated since approximately 70% of them had either a bachelor's or master's degree (see Figure 1). Additionally, no matter the participants' work experience, the majority, 50.8%, had nonmanagerial positions (see Figure 3).

However, there are notable limitations associated with using a sample of just 63 participants. First, the generalisability of the findings is limited. A sample size of 63 is relatively small, which restricts the extent to which the results can be applied to a larger population. Consequently, the characteristics observed in this group may not accurately reflect those of the broader population. Further, the statistical power of the study may be reduced with a small sample size. This means the ability to detect significant effects or differences within the data is lower, increasing the risk of Type II errors, where true effects might go undetected (Suresh & Chandrashekhara, 2012). However, it is important to distinguish between statistical significance and scientific relevance. While a larger sample size makes it easier to detect smaller statistically significant differences, these differences might not be scientifically important (Faber & Fonseca, 2014). Therefore, a larger sample size is not always favourable.

Furthermore, there is a risk of sampling bias. If the sample is not adequately randomised or representative, certain groups within the population might be underrepresented or overrepresented, skewing the results and potentially leading to inaccurate conclusions (Hecker & Kalpokas, 2024). Smaller samples are also less likely to capture the full variability of the population. Individual differences might have a more substantial impact on the results,

making the findings less reliable and robust. Moreover, the external validity of the study is compromised. External validity refers to the extent to which the results can be applied to other settings or groups. With a small sample size, the specific context or conditions of the sample might not apply elsewhere (Faber & Fonseca, 2014). In addition, analysing subgroups within the sample (for example, different age groups) becomes challenging due to the small number of participants. This limitation restricts the ability to explore and understand differences within the population.

While a sample of 63 participants can still provide some insights, it is crucial to acknowledge these limitations. The results should be interpreted with caution, and they should be considered as preliminary or indicative rather than definitive. Further studies with larger sample sizes could potentially be necessary to confirm and extend these findings.

4.2 Linear Regression Model on Coping With Change

The linear regression model for how need for closure affects the ability to cope with change is described below.

Regression Model 1: Linear Regression Model on Coping With Change

$$CPC = \beta_0 + \beta_1 NFCS + \beta_2 NOrg + \beta_3 JS + \beta_4 WE + \beta_5 EduLevel + \beta_6 Gender + \beta_7 Age$$

In this model the participants' score for coping with change is expressed as the dependent variable *CPC*. The explanatory variable *NFCS* represents the participants need for closure score, *NOrg* the number of organisations the respondents have worked for, *JS* their job status, *WE* represents the years of working experience, *EduLevel* represent the participants educational level, and *Gender* and *Age* are self-explanatory variables.

The results from the regression are presented below in Table 4 and show that job status and age are significant at the one percent level, whilst work experience is significant at the five percent level. Moreover, this test shows that there is no significant correlation between need for closure and coping with change. This means that there is no linear relationship between the participants' ability to cope with change and their need for closure.

Table 4: Coping With Change as a Function of Need for Closure: Results of Multiple

Regression Analysis	
VARIABLES	(1) CPC
NFCS	-0.0441 (0.0879)
NOrg	1.745 (1.375)
JS	3.816*** (1.296)
WE	3.922** (1.632)
EduLevel	1.980 (1.388)
Gender	2.046 (2.064)
Age	-0.366*** (0.127)
Constant	29.81* (16.01)
Observations	63
R-squared	0.428

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.3 Non-linear Regression Model on Coping With Change

The non-linear regression model for how the participants' need for closure affects their ability to cope with change is described below.

Regression Model 2: Non-linear Regression Model on Coping With Change

$$CPC = \beta_0 + \beta_1(NFCS) + \beta_2(NFCS)^2 + \beta_3NOrg + \beta_4JS + \beta_5WE + \beta_6EduLevel + \beta_7Gender + \beta_8Age$$

What separates this model from the linear regression model is the second explanatory variable which is represented by the squared need for closure score. Since there was no linear relationship between the need for closure and the participants ability to cope with change, as the results shown in Table 5, we used a statistical test for a non-linear regression model to see if there was a non-linear relation between the dependent variable of coping with change and the independent variable of need for closure (MathWorks, 2024).

The results from the regression model are presented below in Table 5 and show that job status and age are significant at the one percent level, whilst work experience is significant at the five percent level, showcasing similar results of the linear regression model shown in Table 4. Furthermore, we observe from these results that the need for closure score is also not correlated with coping with change, showcasing similar results to the linear regression model.

Table 5: Coping With Change as a Function of Need for Closure and Need for Closure squared: Results of Non-linear-, and Multiple Regression Analysis

VARIABLES	(1) CPC
NFCS	2.121 (1.370)
NFCS_2	-0.00660 (0.00417)
NOrg	1.760 (1.132)
JS	4.097*** (1.352)
WE	3.937** (1.523)
EduLevel	1.748 (1.299)
Gender	2.217 (2.386)
Age	-0.401*** (0.138)
Constant	-145.1 (111.7)
Observations	63
R-squared	0.455

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4.4 Linear Regression Model on Need for Closure

The linear regression model with need for closure as the dependent variable and the control variables age, gender, education level, work experience, job status, and number of previous organisations, is described below.

Regression Model 3: Linear Regression Model on Need for Closure

$$NFCS = \beta_0 + \beta_1CPC + \beta_2NOrg + \beta_3JS + \beta_4WE + \beta_5EduLevel + \beta_6Gender + \beta_7Age$$

To analyse our second empirical research question, we also needed to perform a regression need for closure as a function of our control variables to analyse which demographic factors had the most impact on the individual need for closure. This regression will also provide an answer to our second hypothesis on if job status and work experience had a potential impact on need for closure. The results from the regression are presented in Table 6.

Looking at the effects of the variables gender, education level, work experience, job status, and number of previous organisations, we can see that there is no significant correlation between these variables and the need for closure. Age had a significant negative correlation with need for closure at the five percent level. However, it should be noted that for all regressions, the results are based on certain parameters such as the tests that were chosen to represent each concept. This ought to be considered when evaluating the validity of the results since this could have impacted the results of the regressions.

Table 6: Need for Closure as a function of the variables: ‘Coping With Organisational Change Scale’ score, age, gender, education level, work experience, job status, and number of previous organisations.

VARIABLES	(1) NFCS
CPC	-0.127 (0.254)
NOrg	-0.0113 (1.755)
JS	1.984 (2.340)
WE	1.959 (2.549)
EduLevel	-3.162 (2.107)
Gender	-3.541 (3.738)
Age	-0.518** (0.214)
Constant	187.8*** (13.01)
Observations	63
R-squared	0.148

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

To summarise our empirical analysis, we first saw that the need for closure had no significant relationship with coping with change, which contradicted both previous research and our first hypothesis. Secondly, we saw that work experience and job status had a significant positive relationship with the individual ability to cope with change. From the table we could also see that age had a significant negative relationship with coping with change. The positive relationship between work experience and job status was in line with our second hypothesis, but contradicted previous research that found no significance between the effects of either experience or age. We also found no significant relationship between the need for closure and coping with change when performing the non-linear regression model. For the case of need of closure as the dependent variable, we found no significant relationship between any of the control variables apart from age, which had a negative correlation with the need for closure.

5. Discussion

In this section we will discuss the results from the regression analysis. The results will be analysed and compared with the theoretical framework described above. Additionally, we will evaluate whether our two hypotheses were supported. We will also address the limitations of this research and its design to provide further explanation.

5.1 Relating Results to Theory on Need for Closure and Coping With Change

As described above we used both linear and non-linear regression models to test our hypotheses:

- *Hypothesis 1: The 'Need for Closure' is negatively correlated with individuals' ability to successfully cope with organisational change.*
- *Hypothesis 2: Experience and job level has a positive correlation with coping with change.*

Our primary objective was to explore how the need for closure affects the ability to cope with organisational change, whilst also incorporating various control variables such as job status, work experience, educational level, gender, and age. When coping with change was used as the dependent variable, we found no significant correlation between need for closure and coping with change in either the linear or non-linear regression models. For the linear regression model, job status was significant and positively correlated at a one percent level, whilst age was negatively correlated at the one percent level. Further, work experience was significant and positive at a five percent level. Results from the non-linear regression model were similar to the linear model with job status and age remaining significant at one percent level, and work experience significant at five percent level. Furthermore, when the need for closure variable was used as the dependent variable no significant correlation occurred between coping with change and need for closure. Even the control variables gender, education level, work experience, job status and number of organisations worked for showed no significant correlation with need for closure. The only variable that had a significant correlation with need for closure was age.

The non-significant result found in our statistical analysis between the variables of coping with change and need for closure means that the null hypothesis, which states that there is no effect or no difference between the independent and dependent variable, cannot be rejected based on the data (Lane et al., 2023). The null hypothesis in our study is that there is no relationship between need for closure and coping with change. Since the results for these variables are non-significant, we cannot reject this hypothesis. This indicates that the data do not support our first hypothesis, which states that '*Need for Closure is negatively correlated with individuals' ability to successfully cope with organisational change*'. However, the non-significant results do not prove that the null hypothesis is true and for that reason we cannot exclude that there might be a relation, or a causality, between the independent and dependent variable (Lane et al., 2023), thus there might exist a linear and/or non-linear relation between need for closure and coping with change.

Furthermore, non-significant results indicate that the data did not provide sufficient evidence to support a relationship between the independent and dependent variables (Lane et al., 2023). This might indicate that any observed effect or association is likely due to random chance rather than a true underlying relationship. Even for this reason, we lack evidence to say for sure that there is a causality between the need for closure and coping with change. One reason for the non-significant result can be due to the small sample size used in this analysis. A small sample often lacks the ability to detect a statistically significant effect, even if one exists, thus the statistical power is reduced. This increases the risk of a Type II error, which means that the null hypothesis is not rejected even though it is false. Therefore, the results become false negative (Suresh & Chandrashekhara, 2012). In our case it means that we fail to reject the null hypothesis that there is no relationship between need for closure and coping with change even though it might be false.

Nevertheless, some of the independent variables used in this analysis were significant. Age was significant and negatively correlated in all three regression models, when both coping with change and need for closure were used as the dependent variable. Since age has a negative correlation with coping with change, our results suggest that the individual's ability to cope with change decreases as we get older. This seems a bit contradictory since work experience has a positive correlation with coping with change. Age and work experience should be positively correlated due to the fact that experience increases at the same rate as age. However, the intervals used to ask about the participants' work experience might be

improperly defined, e.g., the highest interval was “over 10 years”. This means that a 28-year-old who has been working since age 18 would fall into the same category as a 60-year-old with the same amount of work experience, despite the significant difference in their ages. This categorisation does not account for the significant age difference between these respondents. As a result, the negative correlation between age and coping with change might be misleading, as it doesn't fully capture the nuanced relationship between age, experience, and coping ability. Therefore, the intervals for work experience may need to be redefined to provide more accurate insights.

Additionally, our findings contrast with previous research where age has been found not to negatively influence an individual's ability to cope with change. However, previous research has found that people's coping strategies change over time, and older people's coping strategies tend to be more emotional-focused rather than problem-focused (Lazarus, 1996). This is interesting in regard to Judge et al. 's (1999) 12-item test where one question is phrased “When changes are announced, I try to react in a problem-solving, rather than an emotional, mode”. If it is true, that the older participants in our research responded that they rather use a more emotional-focused mode they will get lower scores from this question. In this research, those participants will get lower scores on their ability to cope with change. Hence, the negative correlation between age and coping with change.

However, job status and work experience were significant and positively correlated with coping with change in both the linear and non-linear regression. This suggests that participants with a higher job status are better at coping with change. The same can be said for the participants that have more work experience, and that they also cope better with change than those with less work experience. These positive and significant results between coping with change and the control variables work experience and job status support our second hypothesis that ‘*Experience and job level has a positive correlation with coping with change*’. Also, this result aligns with Judge et al. 's (1999) research that found job level and job performance affected individuals’ ability to cope with change. There are several reasons why job status and work experience were found to be significant and positively correlated with coping with change in both the linear and non-linear regression models. Firstly, individuals with higher job status and more work experience have likely developed a broader range of skills and competencies over time. These skills can help them navigate and adapt to change more effectively. In addition, this adaptability can reduce the uncertainty and

ambiguity associated with change, fulfilling their need for closure, which is the desire for a clear and stable understanding of the world (Kruglanski & Webster, 1994). These results can also be explained by Holmes' (2015) saying that people are able to develop their ability to handle ambiguity and uncertainty. It means that people with higher job status and more work experience in our study have not necessarily learnt how to fulfil their need for closure, they have rather developed abilities to embrace the uncertainty and ambiguity that change entails. Moreover, with experience comes a deeper understanding of the industry, organisational processes, and the potential impacts of change. This knowledge allows them to anticipate and manage change more proficiently. According to Lay Epistemic Theory, individuals seek to form and maintain a stable and coherent understanding of the world around them. Experienced individuals, having accumulated extensive knowledge and insights, are better equipped to process, and integrate new information, thereby maintaining their cognitive stability even in the face of change. This theoretical perspective suggests that their enhanced ability to anticipate and manage change is a function of their well-developed epistemic framework, which helps them navigate and adapt to evolving organisational environments more effectively (Kruglanski, 1989). However, this aspect of human cognition might be missed by the Need for Closure Scale and framework. Thus, the Need for Closure Scale is not able to capture all aspects that affect humans' ability to cope with change. This reasoning does also align with Neuberger et al.'s (1997a) criticism against the Need for Closure Scale. They argue that the scale does not capture all dimensions of Need for Closure (Neuberger et al., 1997a). This might be another explanation for the non-significant result that occurred between the need for closure and coping with change in this study.

Furthermore, individuals in higher job positions often have more influence and control over the change process, in other words they are often in charge of and leading the change. Being able to contribute to decision-making and implementation can make the change seem more manageable and less threatening (Judge et al., 1999). This result also made us question the 12-item scale on coping with change, particularly questions such as 'I often find myself leading change efforts in this company' and 'When changes happen in this company, I react by trying to manage the change rather than complain about it', were asked. When individuals with higher job status respond to these questions, their responses may be somewhat biased, as they are likely the ones responsible for initiating change within their organisation. It is evident that they frequently lead change initiatives as part of their role, and consequently, they are more inclined to "manage the change rather than complain about it." This aspect

raises concerns about the accuracy of the 12-item test for assessing coping with change, as it does not adequately capture an individual's ability to cope with change when they are not in a position of control. This aligns with Büchel's (2023) explanation that coping with change includes multiple levels that should be considered when examining how well people cope with change. Judge et al.'s test does not cover all of these dimensions. Additionally, previous research has also shown that need for closure is situational. This means that a person's need for closure varies between situations. Some situations that raise a person's need for closure might lower another's (Holmes, 2015). These aspects are not considered in our study since we are only asking the participants to do these tests once, and we do not account for what type of stage in life, or situation the respondents are in. E.g., if they are going through changes in their personal life, work life, experience huge losses etc. It is also noteworthy to mention that an individual's need for closure may arise in times when it is needed at most. Change can sometimes require fast decisions and action taking, in such situations the absence of closure can seem costly (Bukowski et al., 2013). Thus, a person's heightened need for closure should be positive for one's ability to cope with change.

Furthermore, the results from the linear regression model with need for closure as the dependent variable also suggest that age has a negative correlation with need for closure. Hence, this result suggests that individuals' need for closure decreases with age. This could be explained by several factors, including increased life experience. As people age, they gain experiences and knowledge which can lead to greater comfort with ambiguity and uncertainty. Ageing is also associated with improved emotional regulation skills as Lazarus (1996) found from his study looking at how people's ability to cope with change evolve over time. Older adults might be better at managing stress and anxiety, which can reduce their desire for quick resolutions and clear-cut answers. Consequently, they may become more adaptable and open to different perspectives, reducing their need for closure (Kruglanski & Webster, 1994).

The findings from Kruglanski et al. (2007) and our study also offer contrasting insights into the relationship between need for closure and coping with organisational change. Kruglanski et al.'s work highlights a clear negative impact of high need for closure on adaptability to change, whereas our study suggests that need for closure does not significantly influence the coping ability. Kruglanski et al. draw the conclusion that individuals with a high need for closure tend to resist organisational change due to their preference for stability and certainty.

Contrary, those with a strong locomotion orientation are more adaptable to change, as they are driven by progress and movement. These differences underscore the importance of considering various contexts and sample characteristics when examining psychological constructs and their impacts on organisational behaviour.

However, it's important to analyse the specific reasons behind why the results differ in the study by Kruglanski et al. compared to ours. One possible explanation could be related to the difference in group characteristics between the two research studies. For example, Kruglanski et al. (2007) found that need for closure correlated negatively with coping with change in all of their three studies, but in all of these three studies they found no correlation between age and coping ability. This contrasts with our findings since we found a significance at the one percent level between age and coping with change. This could potentially mean that the variance in age in the studies by Kruglanski et al. was too low for there to be any significant effect found. The result of this could impact the external validity of the study's findings since it might be a result of a homogeneous sample size. Issues with external validity isn't a cause for concern regarding the actual study, but it might be one possible explanation for why their results differed from ours since we did have a more heterogeneous sample size, specifically in age (see Appendix F).

A more homogenous sample could then possibly provide significant results, but these might simply be an effect of the people partaking in the study possessing similar qualities, rather than a finding that could be applicable generally. However, it's important to also acknowledge the shortcomings of our study, and that the difference in results could also come as a consequence of our own sample being non-random since this might create biased results impacting the external validity of the study. This means that whilst it's possible to question the external validity of the study done by Kruglanski et al. the same problem of external validity still exists within our study. Therefore, the non-significant relationship between need for closure and coping with change that could be seen from our results should also be treated with caution and not as evidence of a lack of correlation between the two concepts.

5.2 Different Measurements of Need for Closure and Coping With Change

It's important to acknowledge that both the need for closure and coping with change, are incredibly difficult concepts to quantify. For this study, we chose the test developed by Kruglanski et al. (1997) to try and encapsulate some of the characteristics of this concept. These involved the five items order, predictability, decisiveness, avoidance of ambiguity, and closed mindedness (Kruglanski & Webster, 1994). We then tested the individual's score on need for closure against their score for coping with change which was based on the seven characteristics locus of control, generalised self-efficacy, self-esteem, positive affectivity, openness to experience, tolerance for ambiguity, and risk aversion (Judge et al., 1999). However, it needs to be emphasised that the results simply show that there is no correlation between need for closure and coping with change based on the parameters used in this study. The study we performed simply tests the two concepts based on the traits stated above, but there might be other important traits that were not used that need to be evaluated in the context of both need for closure and coping with change.

6. Concluding Remarks

In this segment we summarise our research with some concluding remarks. Moreover, we will describe how this research can contribute to further research within the field of need for closure and organisational change.

6.1 Summary and Conclusion

Wright and Wigmore (2020) outlined the effects of the world becoming more 'VUCA', and how this could potentially mean that people will have to become more used to change, and thus, better at coping with change. Therefore, we chose to study two concepts that we had theoretical reasons to believe would become more relevant in such a changing world.

The aim of our study was to explore if, and to what degree, the need for closure affects individuals' ability to cope with change. The study also included various control variables to enhance the validity of the research. However, we found no significant correlation between the need for closure and coping with change. Thus, these results contradict previous findings made by Kruglanski et al. (2007), and consequently our first hypothesis, proposing a negative correlation between need for closure and coping with change, could not be supported. Still, these results do not confirm the truth of the null hypothesis either, hence, there might be a relationship between the variables.

Furthermore, our results indicate that job status and work experience were positively correlated with coping with change. Therefore, our second hypothesis was supported by the data. Yet, the negative correlation observed between age and coping with change makes us reconsider the test construction and/or the possibility of overlooked dimensions explored by the theoretical framework. Nevertheless, our study's identification of significant demographic factors provides insights into coping with change. Comparisons with prior research underscore the importance of contextual factors in understanding psychological constructs. The findings from this study are somewhat vague. However, it underscores the complexity of individuals' need for closure and their ability to cope with change. These concepts are multifaceted and in need of further research to more specifically be able to define the relationship between the two.

6.2 Future Research

Future research on the relationship between need for closure and coping with change is needed to be able to define the causality between the two concepts. Several aspects need to be considered to deepen the understanding of this relationship. Firstly, expanding the sample size and diversity can enhance the generalisability of the findings. This includes participants from various industries, cultures, and age groups that will provide a more comprehensive view of how these concepts interact across different contexts. Secondly, it might be needed to develop more nuanced, accurate and detailed measurement tools. Current scales may not fully and precisely capture the complexity of the concepts for the need for closure and coping with change. In addition, the control variables may also be wrongly formulated. For example, refining the assessment of work experience and job status, and ensuring that these factors are considered in relation to age, could create more accurate insights.

Thirdly, the method used in this study may not have been the best suited. Potentially longitudinal design could have enhanced this study. This method is used during a longer period, looking at and doing repeated observations of the same variables to see how they evolve over time. Therefore, the longitudinal method may offer broader and more valuable perspectives on how the need for closure and coping abilities is affected by the situation. Understanding these dynamics could give valuable information to organisations to create better support strategies aimed at enhancing the adaptability. Additionally, by using qualitative research methods, such as interviews and case studies, could have provided more in-depth insights into the personal experiences and perceptions of individuals facing organisational change. These methods can uncover subtleties and dimensions that our quantitative approach might miss.

Finally, exploring the interplay of other psychological factors, such as emotional intelligence, resilience, and personality traits, with need for closure and coping with change can offer a more comprehensive understanding of how individuals navigate uncertainty and adapt to new situations. By addressing all of these areas, future research can contribute to a more nuanced and practical understanding of the relationship between need for closure and coping with change, ultimately informing better organisational practices and support mechanisms.

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Appendix

Appendix A

The Need for Closure Scale
<ol style="list-style-type: none">1. I think that having clear rules and order at work is essential for success.2. Even after I've made up my mind about something, I am always eager to consider a different opinion.3. I don't like situations that are uncertain.4. I dislike questions which could be answered in many different ways.5. I like to have friends who are unpredictable.6. I find that a well ordered life with regular hours suits my temperament.7. I enjoy the uncertainty of going into a new situation without knowing what might happen.8. When dining out, I like to go to places where I have been before so that I know what to expect.9. I feel uncomfortable when I don't understand the reason why an event occurred in my life.10. I feel irritated when one person disagrees with what everyone else in a group believes.11. I hate to change my plans at the last minute.12. I would describe myself as indecisive.13. When I go shopping, I have difficulty deciding exactly what it is I want.14. When faced with a problem I usually see the one best solution very quickly.15. When I am confused about an important issue, I feel very upset.16. I tend to put off making important decisions until the last possible moment.17. I usually make important decisions quickly and confidently.18. I have never been late for an appointment or work.19. I think it is fun to change my plans at the last moment.20. My personal space is usually messy and disorganized.21. In most social conflicts, I can easily see which side is right and which is wrong.22. I have never known someone I did not like.23. I tend to struggle with most decisions.24. I believe orderliness and organization are among the most important characteristics of a good student.25. When considering most conflict situations, I can usually see how both sides could be right.26. I don't like to be with people who are capable of unexpected actions.27. I prefer to socialize with familiar friends because I know what to expect from them.28. I think that I would learn best in a class that lacks clearly stated objectives and requirements.29. When thinking about a problem, I consider as many different opinions on the issue as possible.30. I don't like to go into a situation without knowing what I can expect from it.31. I like to know what people are thinking all the time.32. I dislike it when a person's statement could mean many different things.33. It's annoying to listen to someone who cannot seem to make up his or her mind.34. I find that establishing a consistent routine enables me to enjoy life more.

35. I enjoy having a clear and structured mode of life.
36. I prefer interacting with people whose opinions are very different from my own.
37. I like to have a plan for everything and a place for everything.
38. I feel uncomfortable when someone's meaning or intention is unclear to me.
39. I believe that one should never engage in leisure activities.
40. When trying to solve a problem I often see so many possible options that it's confusing.
41. I always see many possible solutions to problems I face.
42. I'd rather know bad news than stay in a state of uncertainty.
43. I feel that there is no such thing as an honest mistake.
44. I do not usually consult many different options before forming my own view.
45. I dislike unpredictable situations.
46. I have never hurt another person's feelings.
47. I dislike the routine aspects of my work (studies).

Note: Items 2, 5, 7, 12, 13, 16, 19, 20, 23, 25, 28, 29, 36, 40, 41, and 47 are reverse-scored. The test for Need for Closure created by Kruglanski, Mannetti and Pierros (2021).

The scoring system for the five subscales:

- Order: 1, 6, 11, 20, 24, 28, 34, 35, 37, 47
- Predictability: 5, 7, 8, 19, 26, 27, 30, 45
- Decisiveness: 12, 13, 14, 16, 17, 23, 40
- Ambiguity: 3, 9, 15, 21, 31, 32, 33, 38, 42
- Closed Mindedness: 2, 4, 10, 25, 29, 36, 41, 44

Sum items 18, 22, 39, 43, and 46 to form a lie score. The subject is to be removed if the lie score is greater than 15

Appendix B

Coping With Organisational Change Scale

1. When dramatic changes happen in this company, I feel I handle them with ease.
2. I have been a leader of transformation efforts within this company.
3. The rapid changes that have been occurring in this company are sometimes beyond the abilities of those within the company to manage. R
4. Rapid change is something to adapt to, but not to embrace. R
5. When changes happen in this company, I react by trying to manage the change rather than complain about it.
6. The changes occurring in this company cause me stress. R
7. I see the rapid changes that are occurring in this company as opening up new career opportunities for me.
8. Deep changes are ultimately better for the company.
9. Environmental turbulence presents opportunities to make overdue changes in this company.
10. When changes are announced, I try to react in a problem-solving, rather than an emotional, mode.
11. I often find myself leading change efforts in this company.
12. I think I cope with change better than most of those with whom I work.

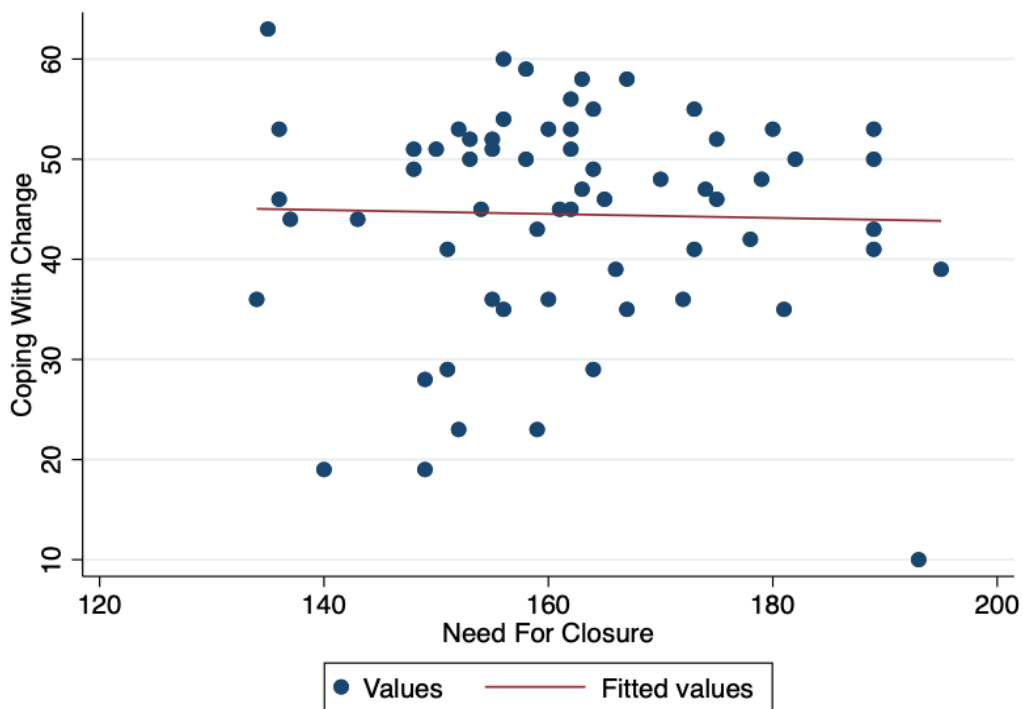
Note: Items 3, 4, and 6 are reversed scored (these items are also marked with an R). The Coping With Change Scale is developed and copyrighted by Timothy A. Judge and Vladimir Pucik (1998) and may therefore not be used without permission. All factor loadings are significant at the 0.001 level.

Appendix C

Personal and Demographic Survey Questions (Numerical Coding)

1. Age
2. Gender (Female = 0; Male = 1)
3. Educational level
 - a. High school education (= 1)
 - b. Some university credit, no degree (= 2)
 - c. Bachelor's degree (= 3)
 - d. Master's degree (= 4)
4. Years of working experience
 - a. Less than 1 (= 1)
 - b. 1–2 (= 2)
 - c. 3–5 (= 3)
 - d. 6–10 (= 4)
 - e. Over 10 (= 5)
5. Job status
 - a. Nonmanagerial (= 1)
 - b. First-level supervisor (= 2)
 - c. Middle management (= 3)
 - d. Top management (= 4)
6. Number of organisations worked for before joining your current organisation
 - a. None (= 1)
 - b. One (= 2)
 - c. Two (= 3)
 - d. Three (= 4)
 - e. Four or more (= 5)
 - f. I have no work experience

Appendix D



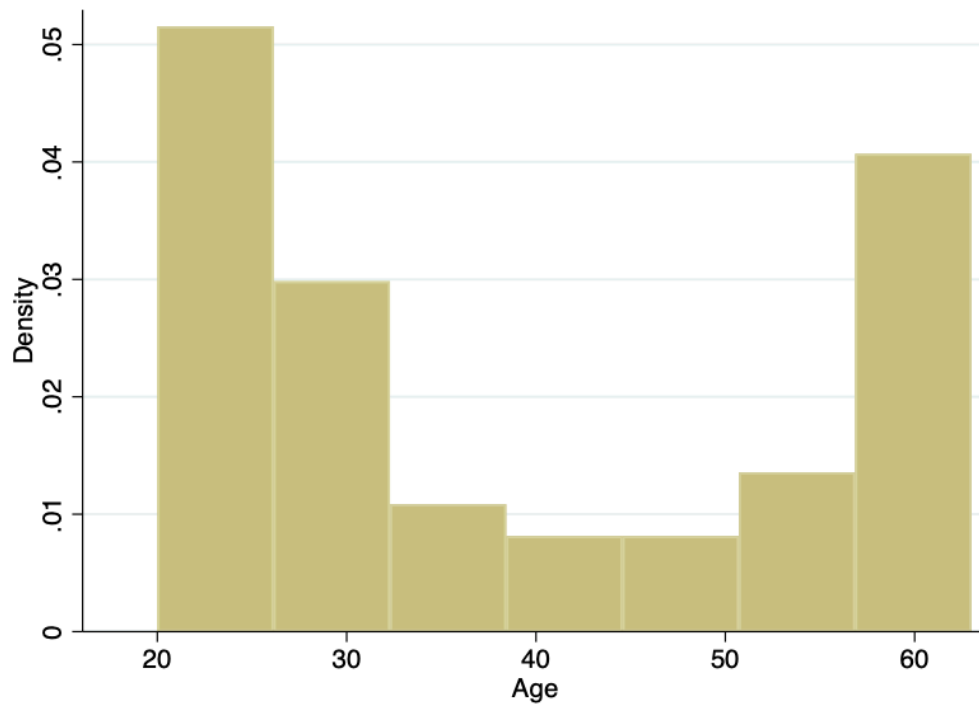
Scatter plot between the dependent variable 'coping with change' and independent variable 'need for closure'. The trendline outlines the result of the linear regression model performed between the two variables.

Appendix E



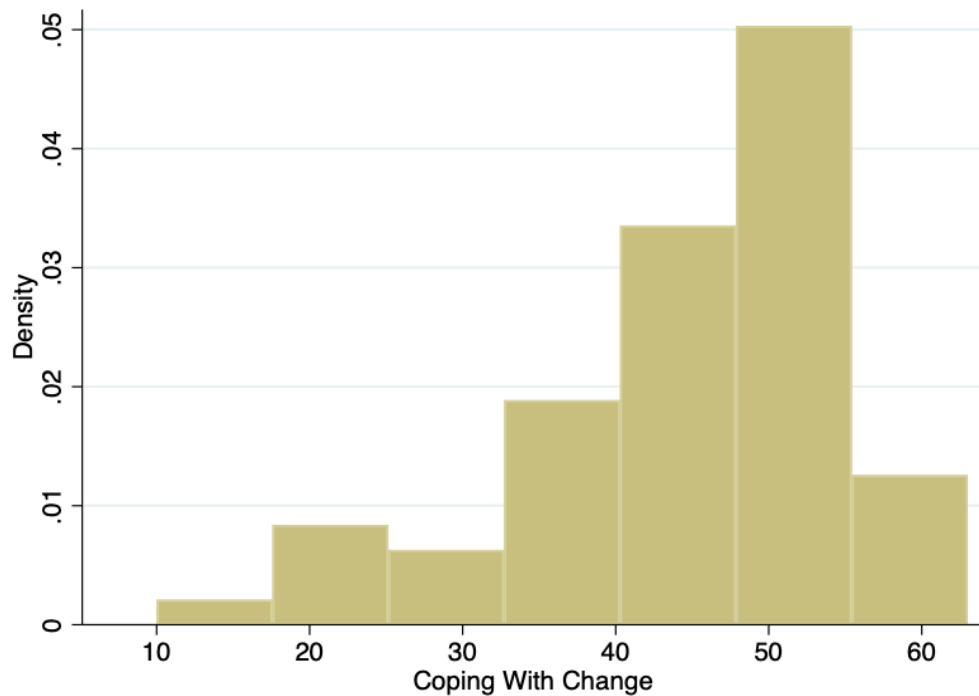
Scatter plot between the dependent variable 'coping with change' and independent variable 'need for closure'. The trendline outlines the result of the non-linear regression model performed between the two variables.

Appendix F



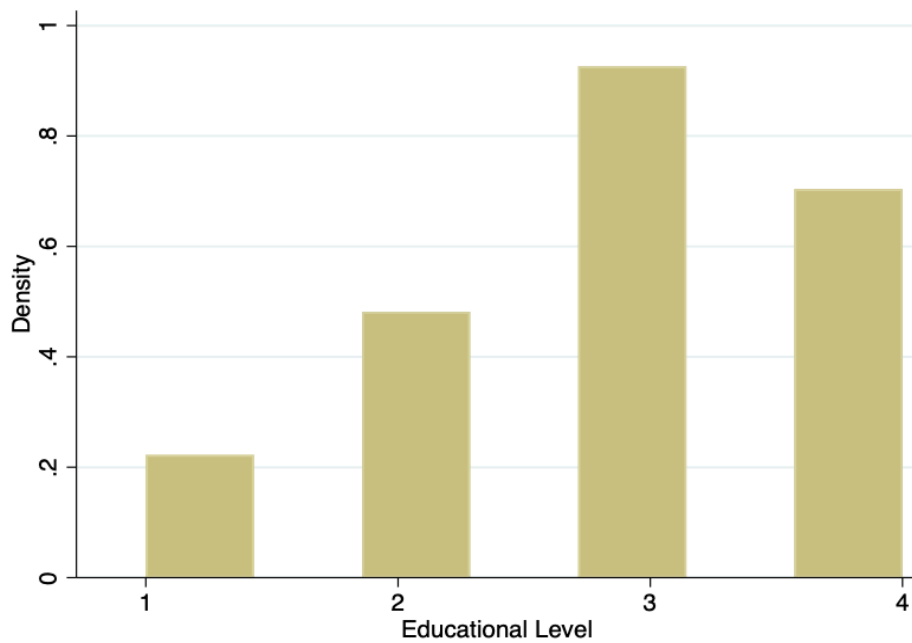
Histogram of the age distribution from the participants in the survey.

Appendix G



Histogram of the participants score on ability of coping with change.
Results range between 10 and 63 (Lowest possible: 12, Highest possible: 72).

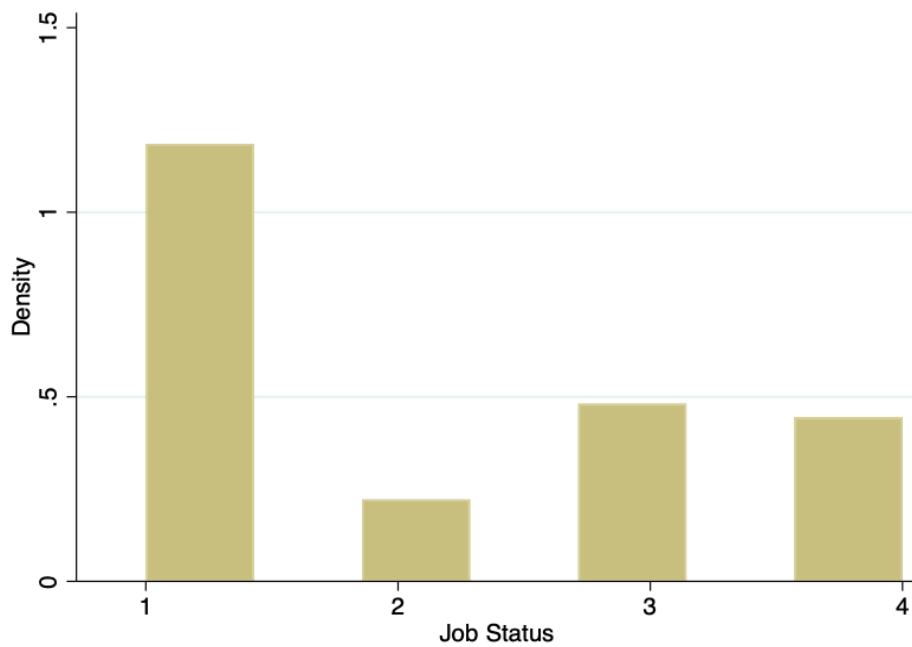
Appendix H



Histogram of the education level of the survey participants.

- 4 - Master's degree
- 3 - Bachelor's degree
- 2 - Some university credit, no degree
- 1 - High school education

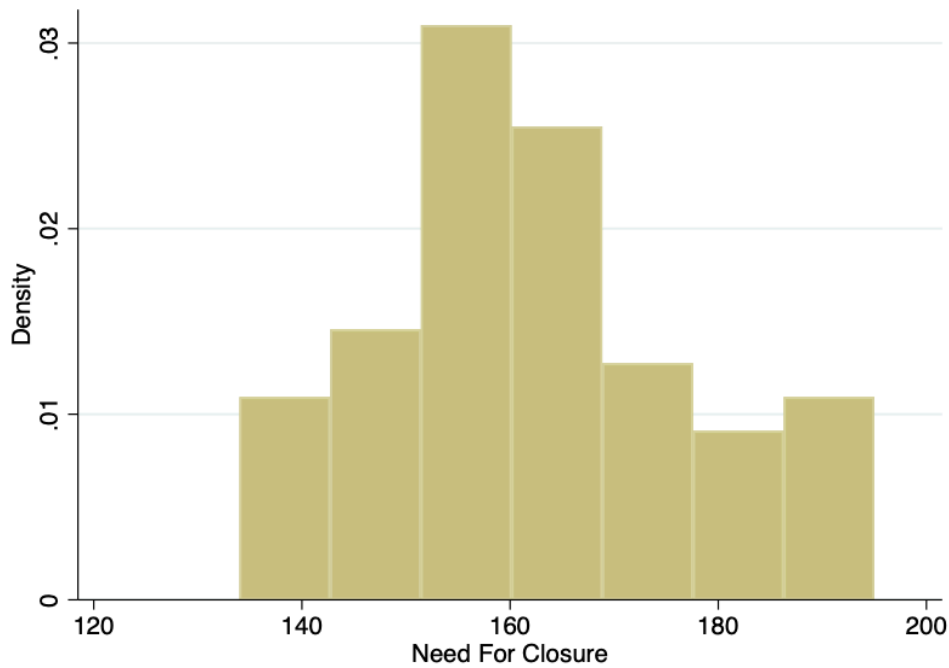
Appendix I



Histogram of the job status of the survey participants.

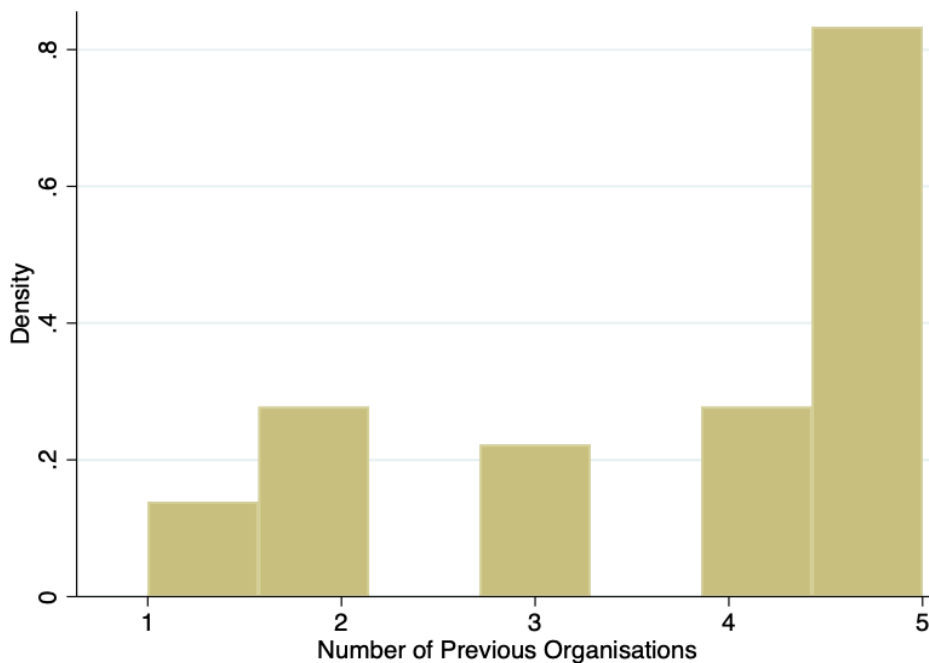
- 4 - Top management
- 3 - Middle management
- 2 - First-level supervisor
- 1 - Nonmanagerial

Appendix J



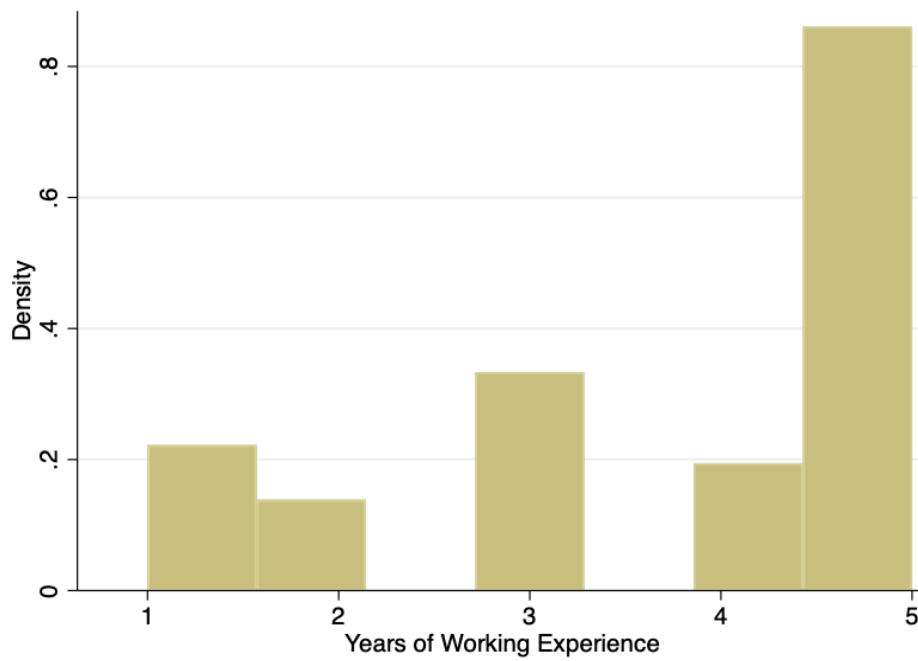
Histogram of the participants score of their individual need for closure.
Results range between 134 and 195.
Need for Closure Scoring Scale: Low \leq 102; 102<Medium Low \leq 158; 158<Medium High<212; 212 \leq High.

Appendix K



Histogram of the number of previous organisations of the survey participants.
5 - Four or more
4 - Three
3 - Two
2 - One
1 - None

Appendix L



Histogram of the years of working experience of the survey participants.

5 - Over 10 years

4 - 6–10 years

3 - 3–5 years

2 - 1–2 years

1 - Less than 1 year