

From Compliance to Commitment: Reframing Research Ethics through Herzberg's Two-Factor Theory

Phouthakannha Nantharath*¹, Junmo Kang²

¹Concordia University, Saint Paul, Minnesota, United States, Email: nantharath.kku@gmail.com

²Park Tudor School, Indianapolis, Indiana, United States, Email: junmok2008@icloud.com

HOW TO CITE:

Phouthakannha Nantharath, Junmo Kang (2026) From Compliance to Commitment: Reframing Research Ethics through Herzberg's Two-Factor Theory

International Journal of Special Education, 41(22s), 600-619

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ABSTRACT:

This study develops a conceptual framework that applies Herzberg's Two-Factor Theory to research ethics, explaining why ethical compliance is indispensable but insufficient for sustained research excellence. It distinguishes conditions that protect research integrity from motivational conditions that encourage researchers to pursue rigorous, meaningful, and responsible scholarships. The study adopts a conceptual literature review and theory-extension approach. It integrates Herzberg's distinction between hygiene and motivator factors with prior literature on research integrity, organizational research climate, misconduct, publication pressure, and scholarly motivation to construct a research ethics framework. Research ethics is conceptualized as a hygiene factor that establishes the minimum foundation for credible scholarly activity by preventing misconduct and protecting integrity. Achievement, recognition, responsibility, autonomy, and professional growth are conceptualized as motivator factors that can move researchers beyond compliance toward internalized ethical commitment. Their contribution depends on being tied to the integrity and rigor of the research process rather than primarily to numerical outputs. Sustainable research excellence requires both a secure ethical foundation and a research environment that supports intrinsic scholarly motivation. Linking ethical conduct with meaningful achievement and professional growth can transform research ethics from an external obligation into an enduring professional value.

Keywords: Research Ethics, Research Integrity, Herzberg's Two-Factor Theory, Hygiene Factors, Motivator Factors, Research Excellence

1. Introduction

Research ethics provides the basic conditions under which scholarly knowledge can be produced and trusted. Fabrication, falsification, plagiarism, duplicate publication, and other questionable research practices can damage not only individual studies but also the credibility of researchers and the wider academic community. Concerns about such practices are not merely theoretical. Empirical evidence has documented both serious

misconduct and a broader range of questionable research behaviors across academic settings (Martinson *et al.*, 2005; Fanelli, 2009; Gopalakrishna *et al.*, 2022). For this reason, universities, journals, and research institutions have devoted considerable attention to ethical standards, institutional policies, oversight procedures, and mechanisms intended to prevent misconduct. Research integrity has consequently become an essential part of responsible scholarly

practice (Steneck, 2006; Komić *et al.*, 2015).

Preventing unacceptable research, however, is not necessarily the same as creating excellent research. A researcher may comply with every formal requirement, avoid plagiarism, maintain accurate records, and follow established procedures without becoming more creative, intellectually engaged, or committed to producing meaningful scholarship. Ethical compliance establishes a necessary boundary for acceptable conduct, but compliance alone does not explain why some researchers willingly pursue standards that extend well beyond what regulations require. This distinction becomes particularly important when research ethics is approached primarily through rules, monitoring, and sanctions.

The academic environment itself can shape how researchers respond to ethical expectations. Organizational justice has been associated with researchers' self-reported behavior, while studies of organizational research climate have shown that integrity is embedded within broader institutional conditions rather than determined solely by individual choices (Martinson *et al.*, 2006; Martinson *et al.*, 2013; Crain *et al.*, 2013). Researchers also experience pressures that may pull professional incentives away from careful scholarly practice. Competition and publication pressure can influence scientific behavior and relationships, particularly when professional success becomes closely tied to visible outputs and productivity measures (Anderson *et al.*, 2007; Tjldink *et al.*, 2014). Fanelli (2010) similarly examined the relationship between pressure to publish and scientific bias. These findings suggest that research integrity cannot be understood entirely as a matter of whether researchers know and obey ethical rules.

A useful way of reconsidering this problem can be found in Herzberg's Two-Factor Theory. Herzberg *et al.* (1959) distinguished between hygiene factors, which address conditions associated with dissatisfaction, and motivator factors, which are related to achievement, recognition, responsibility, and growth. The distinction challenged the assumption that removing negative conditions automatically produces positive motivation. Herzberg (1968) further emphasized that the conditions preventing

dissatisfaction should not be treated as equivalent to the factors that encourage individuals to become genuinely engaged in their work. Work design based on responsibility, achievement, and meaningful development was subsequently associated with the idea of job enrichment (Paul *et al.*, 1969).

This distinction offers an unexplored conceptual lens for research ethics. The present study proposes that the basic safeguards of research ethics can be understood as performing a function analogous to hygiene factors. Their role is indispensable: when ethical safeguards fail, misconduct, retraction, damaged credibility, and loss of trust may follow. Yet the presence of these safeguards does not by itself ensure intellectual curiosity, rigorous inquiry, creativity, or sustained scholarly excellence. Calling research ethics a hygiene factor therefore does not imply that ethics is secondary or less important than motivation. The opposite interpretation is intended. Ethical integrity represents a foundational condition without which sustainable research excellence cannot be built.

The distinction can be understood through a simple conceptual analogy. Oxygen does not by itself make a person happy, accomplished, or fulfilled, yet those states cannot be sustained without it. Research ethics can be understood in a similar way. Ethical standards do not automatically create outstanding scholarship, but scholarly excellence becomes fragile when the integrity of the research process is compromised. The function of research ethics is therefore foundational rather than sufficient: it protects the conditions within which credible and meaningful scholarship can develop.

Motivation introduces a different question. What encourages researchers not merely to avoid misconduct, but to care deeply about the quality and integrity of their own work? In the framework developed in this study, achievement, recognition, responsibility, autonomy, and professional growth are treated as motivator factors capable of moving researchers beyond minimum compliance. A researcher who avoids misconduct primarily because of possible punishment or retraction is responding to a different motivational condition from one who values rigorous research because

the work carries personal meaning, professional responsibility, and a sense of scholarly accomplishment. Responsible research climates have been associated with issues such as fairness, openness, trust, and the conditions in which research is conducted, illustrating the importance of looking beyond formal rules alone (Haven *et al.*, 2019; Haven *et al.*, 2020).

Such a distinction is particularly relevant in research environments where achievement can become closely associated with publication counts, citations, and other measurable outcomes. Strong competitive and publication pressures may create tensions between professional advancement and the values expected of responsible scholarship (Anderson *et al.*, 2007; Tjldink *et al.*, 2014). The challenge is therefore not simply to increase motivation. It is to consider what researchers are being motivated to achieve and whether institutional systems connect achievement, recognition, responsibility, autonomy, and professional growth with the integrity and rigor of the research process. When professional advancement and responsible research are treated as competing demands, compliance may remain external. When they reinforce one another, ethical conduct has greater potential to become part of a researcher's professional identity and scholarly development.

Existing research has provided substantial insight into research misconduct, questionable research practices, organizational research climate, publication pressure, and institutional conditions surrounding research integrity (Martinson *et al.*, 2005; Thrush *et al.*, 2007; Bouter *et al.*, 2016; Gopalakrishna *et al.*, 2022). Herzberg's work, meanwhile, provides a well-established distinction between conditions that prevent dissatisfaction and those that foster motivation and growth (Herzberg *et al.*, 1959; Herzberg, 1968). These streams of literature address different questions. Bringing them together creates an opportunity to reconsider why ethical safeguards are indispensable while also explaining why safeguards alone may not produce sustained commitment to excellent research.

Thus, this study develops a conceptual framework that extends Herzberg's Two-Factor Theory to the domain of research ethics. Rather than

empirically testing causal relationships, it uses a conceptual literature review to examine how research ethics can be interpreted as a foundational hygiene condition and how achievement, recognition, responsibility, autonomy, and professional growth can operate as motivator factors within the research environment. The central argument is that sustainable research excellence requires both: a secure ethical foundation that protects scholarly integrity and a motivational environment that encourages researchers to internalize responsibility for the quality of their work.

This theoretical integration makes three contributions. First, it reframes the relationship between ethics and excellence by distinguishing the conditions that protect research from failure from those that encourage researchers to pursue higher scholarly standards. Second, it moves the discussion beyond a narrow compliance model by explaining how ethical conduct may develop from an externally enforced obligation into an internally valued professional commitment. Finally, it provides a framework for considering how research institutions, universities, and journals might align scholarly motivation with research integrity rather than treating ethics and professional achievement as separate objectives. In this sense, the proposed framework represents a shift from compliance to commitment: research ethics establishes the foundation, while appropriately structured motivators help researchers build upon that foundation toward sustainable research excellence.

2. Literature Review

2.1 Herzberg's Two-Factor Theory: Hygiene and Motivation

Herzberg's Two-Factor Theory was developed from the proposition that the conditions causing dissatisfaction at work are not necessarily the same conditions that create satisfaction and motivation. Herzberg *et al.* (1959) separated hygiene factors from motivator factors, challenging the assumption that satisfaction and dissatisfaction simply occupy opposite ends of a single continuum. Hygiene factors concern the surrounding conditions of work. When these conditions are inadequate, dissatisfaction can arise; improving them can remove or reduce that

dissatisfaction, but doing so does not necessarily generate stronger motivation. Motivator factors operate differently because they are connected more closely to the content and meaning of the work itself.

The distinction matters because removing a negative condition and creating a positive drive are fundamentally different processes. Herzberg (1968) argued that improving conditions surrounding work may address dissatisfaction without necessarily encouraging individuals to invest greater meaning or commitment in what they do. Motivation becomes more closely associated with experiences such as achievement, recognition, responsibility, advancement, and personal growth. The practical significance of this distinction was also reflected in the idea of job enrichment, where greater responsibility and opportunities for accomplishment were expected to make the work itself more meaningful (Paul *et al.*, 1969).

A hygiene factor should therefore not be interpreted as an unimportant factor. Its importance lies in the function it performs. Certain conditions may be so fundamental that their absence creates serious problems even though their presence does not independently generate exceptional performance. This point is especially important for the theoretical extension developed in the present study. The hygiene–motivator distinction provides a way to separate conditions required for an acceptable and stable environment from conditions that encourage individuals to develop, achieve, and become more deeply engaged.

Applying this distinction outside its original organizational setting requires conceptual caution. Herzberg *et al.* (1959) did not develop the theory as a model of research ethics, nor did Herzberg (1968) identify ethical research standards as hygiene factors. The present study therefore does not treat such a relationship as an established proposition in the original theory. Instead, the functional distinction between preventing negative conditions and fostering positive motivation is used as the theoretical basis for reconsidering how research ethics operates within contemporary academic environments.

2.2 Research Ethics as a Foundation of

Scholarly Practice

Research integrity encompasses more than the avoidance of a small number of highly visible violations. Steneck (2006) described research integrity within a broader discussion of responsible research conduct, while Komić *et al.* (2015) demonstrated that the terminology surrounding research integrity and research ethics varies across professional codes and disciplinary organizations. Such variation does not diminish the importance of basic ethical expectations. Rather, it shows that responsible scholarship involves a broad professional context in which acceptable research conduct must be understood, communicated, and maintained.

Evidence concerning misconduct demonstrates why these safeguards are necessary. Martinson *et al.* (2005) reported a range of problematic behaviors among scientists, drawing attention not only to severe forms of misconduct but also to behaviors that may compromise the responsible conduct of research. Fanelli's (2009) systematic review and meta-analysis similarly examined self-reported fabrication and falsification and researchers' reports concerning misconduct by colleagues. More recent evidence indicates that questionable research practices remain an important concern alongside more narrowly defined forms of research misconduct (Gopalakrishna *et al.*, 2022). Bouter *et al.* (2016) further showed that researchers distinguish among major and minor

research misbehaviors, underscoring the breadth of behaviors relevant to research integrity.

These findings help explain why ethical rules, professional standards, and institutional safeguards remain indispensable. Research that depends on fabricated data, manipulated evidence, plagiarism, or other serious breaches cannot retain the same claim to scholarly credibility simply because its topic is innovative or its findings appear important. Ethical integrity is consequently not an optional addition to research quality. It establishes a boundary within which scholarly claims can be treated as legitimate contributions to knowledge.

Yet this foundational role raises a question that has received less attention: what exactly should

ethical compliance be expected to accomplish? Avoiding misconduct protects research from becoming ethically unacceptable, but it does not follow that the absence of misconduct automatically produces originality, intellectual ambition, methodological care, or meaningful scholarly contribution. A researcher can satisfy minimum ethical requirements without necessarily developing a strong internal commitment to the quality of the research itself. The distinction between these two outcomes is central to the framework proposed in this study.

2.3. Research Climate and the Limits of Individual Compliance

Ethical conduct takes place within an organizational environment. Martinson *et al.* (2006) found relationships between scientists' perceptions of organizational justice and self-reported misbehavior, suggesting that research behavior cannot be separated entirely from perceptions of the institutions in which researchers work. This shifts part of the discussion away from the individual researcher as an isolated ethical decision maker and toward the conditions surrounding research practice.

Efforts to measure these conditions have further developed the concept of research integrity climate. Thrush *et al.* (2007) addressed the content validation of the Organizational Climate for Research Integrity survey, and Martinson *et al.* (2013) subsequently reported the development and validation of the Survey of Organizational Research Climate. Using the SORC, Crain *et al.* (2013) examined relationships between organizational research climate and researchers' self-reported research practices. Together, this work supports the view that integrity is connected with features of the research environment and not solely with formal knowledge of ethical rules.

Researchers do not necessarily experience the same environment in the same way. Haven *et al.* (2019) found differences in perceptions of research integrity climate across academic ranks and disciplinary fields. Their findings are important because a single institutional policy may operate within considerably different professional experiences. Junior and senior researchers, for example, may face different levels of authority, dependence, recognition, and career uncertainty

even while formally working under the same ethical standards.

Qualitative evidence adds another dimension. Haven *et al.* (2020) examined researchers' perceptions of a responsible research climate through multiple focus groups, illustrating that responsible research is connected with the environment in which scholarly work is organized and experienced. The broader implication is that institutions cannot assume that issuing ethical rules is equivalent to creating a culture in which those rules become meaningful professional values. Formal expectations define boundaries; the surrounding research climate affects how those boundaries are understood and lived in everyday scholarly work.

2.4. Publication Pressure, Competition, and Research Behavior

Academic researchers operate within systems of evaluation as well as systems of ethics. Career advancement, funding, publication records, and professional recognition can create incentives that influence how research work is prioritized. Anderson *et al.* (2007) examined the potentially adverse effects of competition on scientists' work and professional relationships. Such findings are relevant to research ethics because researchers may simultaneously encounter expectations for responsible conduct and strong incentives to demonstrate productivity.

Publication pressure presents a related concern. Tjink *et al.* (2014) reported an association between perceived publication pressure and scientific misconduct among medical scientists. Fanelli (2010) also examined whether pressures to publish were associated with scientific bias. These studies should not be interpreted as evidence that pressure inevitably produces misconduct. They do, however, indicate that ethical behavior occurs within incentive structures that can create tension between careful research practice and demands for visible scholarly output.

The prevalence of questionable research practices makes this tension especially important. Gopalakrishna *et al.* (2022) examined research misconduct and questionable research practices together with potential explanatory factors among academic researchers in the Netherlands. The

relevance of such work extends beyond determining how often particular behaviors occur. It directs attention toward the circumstances under which researchers make decisions about research conduct.

An ethics system focused primarily on prohibition may therefore address only one side of the research environment. Rules can define what researchers must not do, and sanctions can establish consequences for crossing those boundaries. Neither mechanism necessarily answers what researchers are encouraged to pursue. When publication quantity, rapid output, or other numerical indicators carry substantial professional value, researchers may receive one set of signals from research ethics policies and another from systems of academic reward. Understanding research integrity consequently requires attention to both restraint and motivation.

2.5. From Ethical Compliance to Internalized Commitment

Compliance remains necessary because certain boundaries cannot depend solely on personal motivation. Researchers need clear expectations concerning responsible conduct, and academic institutions need mechanisms capable of responding when those expectations are violated. The literature on misconduct and questionable research practices demonstrates the consequences of treating ethical safeguards as optional (Martinson *et al.*, 2005; Fanelli, 2009; Bouter *et al.*, 2016). The conceptual issue is not whether compliance should be replaced. It is whether compliance represents the endpoint of research ethics.

Herzberg's distinction provides a different way to formulate this issue. If ethical safeguards are interpreted functionally as hygiene conditions, their primary contribution is to protect the basic integrity of scholarly activity. Their successful operation prevents or reduces conditions under which research becomes ethically compromised. The analogy does not mean that research ethics is identical to the workplace hygiene factors originally identified by Herzberg. Rather, the present study extends the logic of the theory: something may be indispensable without being the direct source of higher motivation.

This distinction also helps clarify why stronger ethical commitment may require more than additional rules. Researchers can refrain from misconduct because they fear sanctions, reputational damage, or professional consequences. They can also value responsible conduct because rigorous research represents achievement, because trustworthy work deserves recognition, because they experience genuine responsibility for their decisions, because appropriate autonomy gives them ownership of the research process, or because ethical scholarship contributes to their professional growth. These motivations do not eliminate the need for safeguards. They operate on another level.

Achievement deserves particular attention because academic systems often make it visible through countable outcomes. Publication numbers and related performance indicators can provide useful information, but an

incentive structure centered too narrowly on output may separate professional success from the quality of the process used to produce that output. Evidence concerning competition and publication pressure makes this tension difficult to ignore (Anderson *et al.*, 2007; Fanelli, 2010; Tjldink *et al.*, 2014). A motivational approach to research ethics would therefore need to ask not simply whether researchers are motivated, but what forms of achievement receive institutional recognition.

Recognition, responsibility, autonomy, and professional growth raise similar questions. Recognition can reinforce responsible scholarship when the quality and integrity of the research process are valued alongside visible outcomes. Responsibility becomes more meaningful when researchers have genuine ownership of scholarly decisions rather than treating ethics as a checklist imposed by others. Appropriate autonomy can strengthen that ownership, while opportunities for professional development can connect responsible conduct with a researcher's longer-term scholarly identity. These propositions constitute a conceptual extension developed in this study; they should not be read as empirical conclusions already demonstrated by the existing research integrity literature.

2.6. Conceptual Gap and Theoretical

Direction

Research integrity scholarship has generated substantial knowledge about misconduct, questionable research practices, organizational climate, competition, publication pressure, and responsible research environments. Herzberg's Two-Factor Theory addresses a different but complementary problem: why preventing dissatisfaction is conceptually different from creating positive motivation. What remains insufficiently developed is a theoretical bridge between these two areas.

The gap is particularly visible when research ethics is expected to accomplish two different tasks at once. One task is protective. Ethical standards establish boundaries, reduce unacceptable practices, and preserve the credibility required for scholarship to function. The second task is developmental. Academic environments also need researchers who pursue rigorous and meaningful work because they experience responsibility, achievement, professional growth, and ownership of the research process. Treating these tasks as identical can obscure why an institution may have extensive ethics policies while still struggling to cultivate deep ethical commitment.

This study addresses that gap by proposing a two-

level interpretation. At the foundational level, research ethics functions analogously to a hygiene factor: it protects the conditions necessary for credible research. At the motivational level, achievement, recognition, responsibility, autonomy, and professional growth provide a basis for explaining how researchers may move beyond externally enforced compliance. The two levels are not substitutes. A motivational environment without ethical safeguards can leave research integrity vulnerable, while a strong compliance structure without meaningful scholarly motivation may secure minimum standards without fostering deeper commitment.

The resulting theoretical direction shifts the central question from “How can researchers be made to comply with ethical rules?” toward “How can research environments make integrity compatible with, and ultimately inseparable from, meaningful scholarly achievement?” This shift provides the foundation for the conceptual framework developed in the following sections. Research ethics protects scholarships from becoming unacceptable; a properly aligned motivational system may help researchers transform that protected foundation into responsible and sustained research excellence.

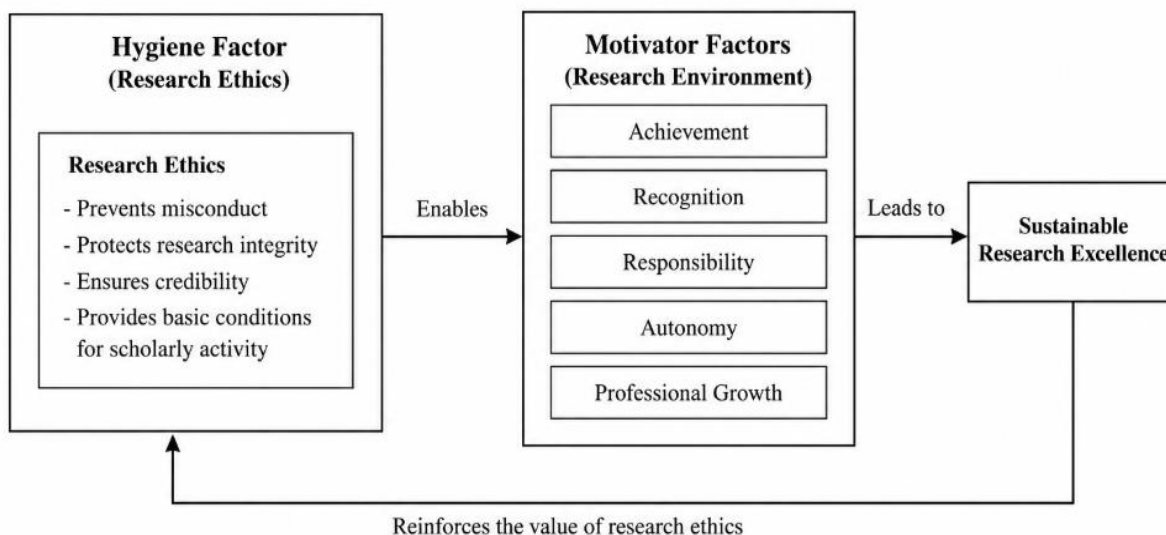


Figure 1: Conceptual Framework from Compliance to commitment

3. Methodology

3.1 Research Design

This study adopts a conceptual literature review approach to extend Herzberg's Two-Factor Theory to the domain of research ethics. The purpose is not to estimate causal relationships or test hypotheses with empirical data. Instead, the

analysis brings together two bodies of scholarship that have largely developed around different questions: the distinction between hygiene and motivator factors in Herzberg's theory and the literature addressing research integrity, misconduct, organizational research climate, publication pressure, and responsible research conduct.

A conceptual approach is appropriate because the central contribution of the study lies in theoretical reinterpretation. Herzberg *et al.* (1959) and Herzberg (1968) developed the hygiene–motivator distinction in relation to work motivation rather than research ethics. Accordingly, this study does not assume that research ethics was originally identified as a hygiene factor. It examines whether the functional logic of the distinction can offer a useful way of understanding the different roles played by ethical safeguards and scholarly motivation in research environments. The resulting framework is therefore a theory extension rather than a direct reproduction of Herzberg's original model.

The review was organized around a focused body of literature relevant to the conceptual problem. Foundational works on Two-Factor Theory provided the theoretical basis for distinguishing conditions that prevent negative outcomes from those associated with achievement, responsibility, recognition, and growth (Herzberg *et al.*, 1959; Herzberg, 1968; Paul *et al.*, 1969). Research integrity studies were then used to examine misconduct, questionable research practices, responsible conduct, institutional climate, organizational justice, competition, and publication pressure. These areas provide the scholarly context needed to consider whether compliance and motivation perform different but complementary functions within research ethics.

3.2 Conceptual Literature Organization

Rather than treating the reviewed studies as a collection of independent findings, the literature was organized according to the conceptual role each stream plays in explaining ethical research behavior. Four areas were considered. The first concerns the meaning and boundaries of research integrity and research ethics, including responsible

conduct and the terminology used across professional settings (Steneck, 2006; Komić *et al.*, 2015). The second addresses misconduct and questionable research practices, providing evidence of the behaviors that ethical safeguards are intended to prevent (Martinson *et al.*, 2005; Fanelli, 2009; Bouter *et al.*, 2016; Gopalakrishna *et al.*, 2022).

A third area concerns the research environment. Studies of organizational justice and research integrity climate indicate that responsible research behavior is situated within institutional conditions rather than being solely an individual matter (Martinson *et al.*, 2006; Thrush *et al.*, 2007; Martinson *et al.*, 2013; Crain *et al.*, 2013). Differences in researchers' perceptions of integrity climate also suggest that ethical expectations are experienced within particular professional and organizational settings (Haven *et al.*, 2019; Haven *et al.*, 2020).

The final area concerns pressures and incentives surrounding scholarly work. Competition and publication pressure are particularly relevant because they reveal possible tensions between expectations for responsible research and systems that reward visible academic performance (Anderson *et al.*, 2007; Fanelli, 2010; Tjldink *et al.*, 2014). These studies were not interpreted as evidence that pressure inevitably causes misconduct. They were used to identify a broader conceptual issue: researchers make ethical decisions within environments that simultaneously regulate conduct and define professional success.

Organizing the literature in this manner allows the review to move beyond a simple summary of previous studies. Each stream contributes to a different part of the theoretical problem. Research integrity literature identifies the boundaries that protect credible scholarship; misconduct research illustrates what can occur when those boundaries are violated; organizational climate research places ethical behavior within institutional settings; and research on pressure and competition draws attention to the incentives surrounding scholarly performance. Herzberg's framework provides the theoretical distinction through which these elements can be reconsidered together.

3.3. Theory Extension and Conceptual Mapping

The theory-extension process was based on functional correspondence rather than literal equivalence. Concepts from research ethics were not assigned to Herzberg's categories simply because they appeared superficially similar. The analysis instead considered the principal function each element performs within the research environment.

Research ethics was mapped to the hygiene side of the framework because its fundamental safeguards establish conditions necessary for credible scholarly activity. Prohibitions against fabrication, falsification, plagiarism, and other unacceptable practices protect the integrity of the research process. Their absence can expose research to serious ethical and professional consequences, as demonstrated by the literature on misconduct and questionable research practices (Martinson *et al.*, 2005; Fanelli, 2009; Bouter *et al.*, 2016; Gopalakrishna *et al.*, 2022). The conceptual mapping does not imply that ethical safeguards are of secondary importance. Their proposed hygiene function refers to their foundational role: they protect research from conditions that can undermine its legitimacy.

Motivator factors were considered through a different functional question: what conditions may encourage researchers to move beyond minimum compliance and invest more deeply in responsible scholarly work? Drawing on the motivational logic of Herzberg's theory, five elements were incorporated into the proposed framework: achievement, recognition, responsibility, autonomy, and professional growth. These elements represent conditions through which responsible conduct may become connected with the meaning and development of scholarly work rather than remaining only an externally enforced requirement.

The distinction between the two sides of the framework is analytical rather than hierarchical. Ethical safeguards and scholarly motivators are not treated as competing explanations, nor does one replace the other. The former establishes a protected foundation for responsible research, whereas the latter addresses the conditions under which researchers may develop stronger

ownership of that responsibility. This separation preserves the central logic of Two-Factor Theory while adapting its function to a research ethics setting.

3.4. Development of the Conceptual Framework

The framework was developed in sequential stages. The first stage identified the protective function of research ethics. Existing scholarship on misconduct, questionable research practices, and research integrity was examined to clarify why ethical safeguards constitute a necessary foundation for scholarly credibility. The second stage considered organizational research climate and academic pressures to understand why individual compliance cannot be separated from the environment in which researchers work. The third stage introduced Herzberg's motivational distinction to separate the prevention of unacceptable conditions from the promotion of meaningful scholarly engagement.

The next stage connected the five motivator factors with the research process. Achievement was interpreted in relation to meaningful scholarly accomplishment rather than publication volume alone. Recognition concerns whether rigorous and responsible research processes receive professional acknowledgment. Responsibility refers to researchers' ownership of the integrity and consequences of their scholarly decisions, while autonomy concerns appropriate discretion over how responsible research is designed and conducted. Professional growth captures opportunities to develop methodological judgment, ethical reasoning, and a longer-term scholarly identity. These interpretations constitute the conceptual development proposed by this study rather than established categories previously validated in the research integrity literature.

One further consideration was necessary. Motivational systems can support responsible scholarship only when the outcomes they reward are compatible with research integrity. Evidence concerning competition and publication pressure indicates why this alignment matters (Anderson *et al.*, 2007; Fanelli, 2010; Tjeldink *et al.*, 2014). Achievement or recognition centered narrowly on numerical productivity may not perform the same function as achievement derived from rigorous,

meaningful, and responsible scholarship. The framework therefore focuses not simply on the presence of motivators but on how those motivators are structured within the research environment.

The conceptual process ultimately produced a two-level framework. At the first level, research ethics operates as a foundational hygiene condition that protects scholarly activity from practices capable of undermining credibility and integrity. At the second level, achievement, recognition, responsibility, autonomy, and professional growth provide motivational conditions through which ethical conduct can become more closely connected with scholarly identity and professional development. The expected conceptual progression is from ethical

compliance to internalized commitment and, ultimately, toward sustainable research excellence.

3.5. Analytical Boundaries

Several boundaries were maintained during framework development. Most importantly, the proposed relationships are conceptual and should not be interpreted as empirically verified causal effects. The study does not claim that the presence of a particular motivator will necessarily produce ethical behavior, nor does it assume that every form of misconduct originates from inadequate motivation. Research misconduct is a complex phenomenon, and prior studies identify organizational, professional, and environmental factors relevant to research behavior (Martinson *et al.*, 2006; Haven *et al.*, 2020; Gopalakrishna *et al.*, 2022).

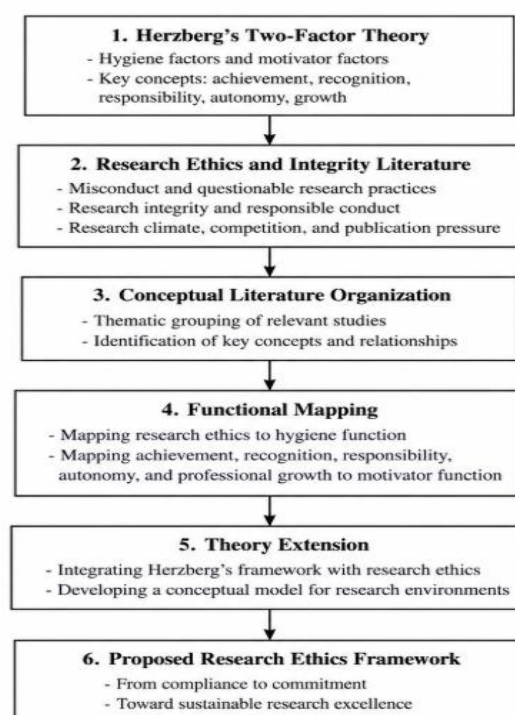


Figure 2: Conceptual Literature Review and Theory-Extension Process

The framework also avoids treating motivation as a substitute for governance. Clear ethical standards, institutional oversight, and accountability remain necessary even when researchers possess strong intrinsic commitment. Conversely, an extensive compliance structure cannot be assumed to produce the deeper forms of scholarly responsibility associated with meaningful achievement and professional growth. The theoretical value of the two-factor

interpretation lies precisely in maintaining this distinction.

For these reasons, the framework developed here should be understood as an explanatory conceptual model that can guide subsequent theoretical discussion and empirical examination. Its purpose is to clarify how two different functions—protecting the ethical foundation of research and cultivating motivation for responsible scholarly excellence—may coexist

within the same research environment. This methodological approach provides the basis for examining the proposed relationships in the following section without presenting conceptual reasoning as empirical evidence.

4. Conceptual Framework and Propositions

4.1 *Research Ethics as a Foundational Hygiene Condition*

The proposed framework begins with a distinction between what makes research acceptable and what helps research become excellent. Ethical standards belong first to the former domain. Fabrication, falsification, plagiarism, inappropriate reporting practices, and other forms of misconduct threaten the credibility of scholarly work regardless of how innovative or interesting its findings may appear. Evidence concerning misconduct and questionable research practices demonstrates why such boundaries remain indispensable to academic research (Martinson *et al.*, 2005; Fanelli, 2009; Bouter *et al.*, 2016; Gopalakrishna *et al.*, 2022).

Describing research ethics as a hygiene condition does not reduce its importance. Hygiene factors in Herzberg's framework concern conditions whose inadequacy creates serious negative consequences even though improving those conditions does not necessarily generate higher motivation (Herzberg *et al.*, 1959; Herzberg, 1968). Applied conceptually to research, ethical safeguards perform a comparable foundational function. Their presence protects the legitimacy of scholarly activity; their absence can compromise the research itself.

The distinction becomes clearer when ethical compliance is separated from scholarly excellence. A manuscript may be entirely free of plagiarism and fabricated data yet still make a weak theoretical contribution. A researcher can comply with ethical requirements while producing work that is methodologically routine or intellectually unambitious. Conversely, originality cannot compensate for serious violations of research integrity. Ethical acceptability and scholarly excellence are therefore connected, but they are not interchangeable.

This relationship can be understood through the analogy of oxygen. Oxygen does not directly create achievement, personal growth, or fulfillment. Its presence is nevertheless a prerequisite for those experiences to occur. Research ethics occupies a similar position in the proposed framework. Ethical safeguards do not independently produce excellent scholarship; they preserve the conditions under which excellent

scholarship remains possible. This leads to the first proposition:

Proposition 1. Research ethics functions as a foundational hygiene condition by protecting the minimum conditions necessary for credible scholarly activity, but ethical compliance alone is insufficient to generate sustainable research excellence.

4.2 *The Boundary between Compliance and Commitment*

Compliance has an essential place in research governance. Clear standards tell researchers which practices are unacceptable and provide institutions with grounds for responding to misconduct. The prevalence of questionable research practices and more serious violations makes it difficult to imagine a responsible research system without explicit ethical boundaries (Fanelli, 2009; Bouter *et al.*, 2016; Gopalakrishna *et al.*, 2022). A motivational framework should therefore supplement compliance rather than replace it.

Problems emerge when compliance becomes the final objective. Researchers may follow a rule because they understand and value the principle behind it, or because violation carries a possibility of detection, rejection, retraction, reputational loss, or other consequences. Both can produce outward compliance, yet the underlying relationship with research ethics is different. The first contains an element of personal commitment; the second may remain dependent upon external control.

Research climate studies provide a useful background for this distinction. Perceptions of organizational justice and research climate have been associated with research practices, while researchers' experiences of responsible research environments can vary according to institutional and professional circumstances (Martinson *et al.*, 2006; Crain *et al.*, 2013; Haven *et al.*, 2019; Haven *et al.*, 2020). Ethical behavior consequently develops within an environment in which researchers interpret not only formal rules but also what their institutions reward, tolerate, and value.

A compliance-centered environment may be successful at communicating what researchers should avoid while remaining comparatively silent about why responsible scholarship should become personally meaningful. The transition proposed here is therefore not from regulation to deregulation. It is a transition from compliance as the endpoint toward compliance as the beginning of a deeper form of scholarly responsibility.

Proposition 2. Ethical safeguards are necessary for responsible research, but movement from external compliance toward internalized ethical commitment requires motivational conditions that connect integrity with the meaning and value of scholarly work.

4.3. Achievement: Redefining What Counts as Scholarly Success

Achievement occupies a central position in Herzberg's motivational logic (Herzberg *et al.*, 1959; Herzberg, 1968). Within academic research, however, the meaning of achievement is particularly consequential. Researchers work in environments where publications, citations, grants, and other measurable outputs can influence employment, promotion, reputation, and professional opportunities. These indicators can serve legitimate evaluative purposes, yet an excessive emphasis on numerical productivity can narrow the meaning of scholarly accomplishment.

Research on competition and publication pressure makes this issue relevant to research integrity. Anderson *et al.* (2007) documented concerns surrounding competition in scientific work and relationships, while Tjeldink *et al.* (2014) examined publication pressure in relation to scientific misconduct. Fanelli (2010) also investigated whether pressure to publish was associated with scientific bias. None of these findings means that ambition or productivity is inherently inconsistent with ethical research. They instead draw attention to what may happen when incentives for visible output become disconnected from the processes through which reliable scholarship is produced.

The proposed framework therefore redefines achievement around the quality of scholarly accomplishment rather than volume alone. Completing a methodologically rigorous study, reporting an unexpected or null finding accurately, conducting a careful replication, improving transparency, or producing work that meaningfully advances understanding can represent genuine scholarly achievements even when they do not maximize conventional productivity indicators. Under such conditions, integrity is not an obstacle standing between the researcher and achievement. It becomes part of what achievement means.

Proposition 3. Achievement is more likely to support internalized research ethics when scholarly accomplishment is defined by rigor, meaningful contribution, and integrity of process rather than predominantly by numerical research outputs.

4.4. Recognition: Making Responsible Research Professionally Visible

Researchers do not work in complete isolation from professional judgment. Their work is evaluated by journals, universities, funding bodies, peers, and disciplinary communities. Recognition therefore has the capacity to communicate what the academic system genuinely values.

If recognition is attached almost exclusively to highly visible outcomes, responsible processes may remain professionally less visible. Careful documentation, transparent reporting, responsible data practices, replication work, and methodological restraint can require substantial effort without necessarily generating the same immediate recognition as publication quantity or striking findings. A research environment seeking deeper ethical commitment needs to reduce this disconnect.

Recognition in the present framework is not proposed as a reward for merely obeying basic ethical rules. Researchers should not require special praise for refraining from fabrication or plagiarism. The more meaningful role of recognition is to make rigorous and responsible scholarly practice part of professional accomplishment. Practices such as transparent reporting, appropriate data sharing, preregistration where relevant, and careful replication can become more visible through journal practices and institutional evaluation. Such mechanisms are illustrative applications of the conceptual framework rather than claims that the reviewed research integrity studies have empirically established one universally effective recognition system.

When the academic community visibly values how knowledge is produced as well as what is produced, researchers receive a different professional signal. Integrity then becomes more closely associated with respected scholarship rather than functioning only as a threshold requirement.

Proposition 4. Recognition can strengthen ethical commitment when professional acknowledgment reflects the rigor and integrity of the research process alongside conventional scholarly outcomes.

4.5. Responsibility and Ownership of Research Integrity

Responsibility carries a meaning beyond formal accountability. A researcher may be accountable because an institution requires compliance, yet

personal responsibility involves recognizing the consequences of one's own scholarly decisions. This difference is important because research contains numerous judgments that cannot be reduced completely to checklists.

Herzberg's emphasis on responsibility as a source of motivation provides a basis for extending this idea to scholarly work (Herzberg *et al.*, 1959; Paul *et al.*, 1969). Researchers make decisions about design, analysis, interpretation, reporting, authorship, and communication. Rules can establish boundaries around many of these activities, but responsible judgment remains necessary within those boundaries.

The organizational setting can either support or weaken this sense of ownership. Research climate scholarship suggests that institutional environments are related to how responsible research is experienced and practiced (Martinson *et al.*, 2013; Crain *et al.*, 2013; Haven *et al.*, 2020). A system dominated by procedural checking may unintentionally encourage researchers to view integrity as somebody else's administrative requirement. Giving researchers meaningful responsibility for the quality and consequences of their decisions creates a different relationship with ethical practice.

Proposition 5. Greater ownership of responsible scholarly decisions can strengthen the movement from externally imposed ethical compliance toward personally internalized responsibility for research integrity.

4.6. Autonomy: Ethical Judgment Rather Than Procedural Freedom

Autonomy requires careful interpretation in the context of research ethics. It cannot mean freedom from ethical standards. Researchers cannot legitimately choose whether fabrication, falsification, or plagiarism should be acceptable simply because they possess professional independence. The relevant form of autonomy concerns meaningful discretion within clear ethical boundaries.

Scientific work frequently involves uncertainty, methodological choices, unexpected findings, and decisions for which standardized procedures provide incomplete answers. Researchers therefore need room to exercise professional judgment. When every aspect of responsible conduct is experienced merely as an administrative checklist, compliance may become procedural rather than reflective. Appropriate autonomy allows researchers to take ownership of how ethical principles are applied to the actual

circumstances of their work.

This interpretation also distinguishes autonomy from absence of oversight. Strong governance and meaningful autonomy can coexist. Ethical standards define the boundaries; autonomy operates within those boundaries by allowing researchers to exercise judgment, explain their reasoning, and accept responsibility for their decisions. Such a structure is especially relevant to early-career development, where learning to make responsible research decisions may be as important as learning the rules themselves.

Proposition 6. Researcher autonomy can contribute to internalized ethical commitment when meaningful scholarly discretion is exercised within clear standards of research integrity and accompanied by responsibility for research decisions.

4.7. Professional Growth: Ethics as Part of Becoming a Researcher

Professional growth introduces a longer time horizon. Ethical training is sometimes concentrated at the beginning of a research project, degree program, or institutional appointment. Researchers, however, continue to encounter new methodological, collaborative, authorship, data, and publication decisions as their careers develop. Responsible research therefore involves continuing judgment rather than one-time knowledge acquisition.

Growth becomes motivational when researchers can see responsible scholarship as part of becoming better researchers. Mentorship, opportunities to develop methodological competence, discussion of difficult ethical decisions, and protected opportunities for careful or exploratory work can connect integrity with professional development. The emphasis moves away from learning ethics simply to satisfy a requirement and toward developing the capacity to make increasingly mature scholarly judgments.

This point also carries implications for the research climate. Researchers working under intense short-term performance demands may have limited opportunities to develop practices whose benefits emerge gradually. Publication pressure and competitive conditions documented in previous research illustrate why professional development cannot be considered independently from the environment in which academic careers unfold (Anderson *et al.*, 2007; Tjldink *et al.*, 2014). Growth needs both time and institutional space.

Proposition 7. Professional growth can support sustained ethical commitment when the development of methodological competence, ethical judgment, and scholarly identity is treated as an integral part of research career development.

4.8. Alignment of Motivators with Research Integrity

The five motivator factors should not be assumed to produce positive outcomes simply because they are present. A researcher can be highly motivated to achieve, seek recognition, exercise autonomy, accept responsibility, and advance professionally while pursuing goals that do not necessarily support responsible research. Motivation itself is ethically neutral unless the structure surrounding it connects professional success with responsible scholarly practice.

This qualification is crucial. An achievement system that primarily rewards publication volume may intensify output without strengthening integrity. Recognition attached only to dramatic findings may create different incentives from recognition attached to careful and transparent scholarship. Autonomy without responsibility can become detachment from accountability, while responsibility without meaningful authority can become little more than obligation. Professional growth defined only by rapid advancement may similarly differ from growth grounded in the development of scholarly judgment.

The central institutional challenge is therefore one of alignment. Universities, journals, funding bodies, and research organizations influence the signals researchers receive about what constitutes success. Existing work on organizational research climate supports the importance of the environment surrounding responsible research (Thrush *et al.*, 2007; Martinson *et al.*, 2013; Haven *et al.*, 2019; Haven *et al.*, 2020). The present framework extends that discussion by proposing that motivational structures should be designed so that achievement and integrity point in the same direction.

Proposition 8. Motivator factors are more likely to strengthen research integrity when institutional reward and development systems align achievement, recognition, responsibility, autonomy, and professional growth with rigorous and responsible research processes.

4.9. From Internalized Commitment to Sustainable Research Excellence

The framework reaches its central outcome when research ethics is no longer experienced only as an

external restriction. Internalization means that researchers begin to regard integrity as part of what it means to conduct worthwhile scholarship. Fabrication or manipulation then becomes objectionable not merely because it violates a rule or carries a risk of punishment, but because it damages the research itself and conflicts with the researcher's understanding of responsible scholarly achievement.

This does not imply that internally motivated researchers become immune to misconduct or that formal oversight becomes unnecessary. Evidence concerning questionable research practices and the influence of research environments cautions against such a simple interpretation (Martinson *et al.*, 2006; Gopalakrishna *et al.*, 2022). The argument is more limited: external safeguards and internal commitment perform different functions, and a sustainable research environment benefits from both.

Research excellence, in this framework, should likewise not be reduced to productivity. It refers to scholarship that combines credibility, methodological rigor, meaningful contribution, and responsible conduct. Ethical safeguards protect the foundation upon which such work can occur. Properly aligned motivators encourage researchers to build upon that foundation rather than merely remain within its minimum boundaries.

A reinforcing relationship may develop over time. Responsible research enables credible scholarly achievement; meaningful achievement can strengthen researchers' identification with responsible scholarly practice; that identification may, in turn, reinforce the value attached to research integrity. The relationship is proposed conceptually rather than asserted as an empirically demonstrated feedback effect. It nevertheless explains why the model presented in Figure 1 includes a return pathway from sustainable research excellence to the continuing value of research ethics.

Proposition 9. The combination of a secure ethical foundation and appropriately aligned scholarly motivators can support the transition from compliance to internalized commitment, providing a conceptual basis for sustainable research excellence and a stronger ethical research culture.

The resulting model does not place research ethics and research excellence on opposite sides of a trade-off. Nor does it suggest that motivation

should replace rules. Research ethics establishes the conditions that scholarly work cannot responsibly do without; motivation helps explain how researchers may move beyond those minimum conditions toward work they regard as meaningful, rigorous, and worthy of professional commitment. The distinction is simple but

consequential: research ethics protects scholarship from becoming unacceptable, while a well-designed motivational environment can help responsible scholarship become excellent.

Table 1: Summary of the Proposed Conceptual Framework

Conceptual Component	Role in the Framework	Application to Research Ethics	Expected Contribution	Proposition
Research Ethics as a Hygiene Condition	Establishes the ethical foundation of scholarly activity	Prevents misconduct and protects the credibility and integrity of research	Creates the minimum conditions under which credible and responsible research can occur	P1
Compliance–Commitment Transition	Distinguishes external conformity from internalized responsibility	Moves ethical conduct beyond rule following, monitoring, and avoidance of sanctions	Encourages researchers to regard integrity as a professional value rather than only an external requirement	P2
Achievement	Provides a sense of meaningful scholarly accomplishment	Defines success through rigor, integrity, and meaningful contribution rather than numerical output alone	Connects responsible research with scholarly accomplishment	P3
Recognition	Makes responsible scholarly practice professionally visible	Extends recognition beyond research outcomes to the integrity and rigor of the research process	Reinforces the professional value of responsible scholarship	P4
Responsibility	Strengthens ownership of research decisions	Encourages researchers to accept responsibility for the integrity and consequences of their scholarly choices	Develops personal ownership of research integrity	P5
Autonomy	Supports meaningful scholarly discretion within ethical boundaries	Allows researchers to exercise professional judgment while remaining accountable to clear integrity standards	Encourages reflective rather than purely procedural ethical practice	P6

Professional Growth	Connects integrity with long-term researcher development	Develops methodological competence, ethical judgment, and scholarly identity over time	Makes responsible research part of professional development	P7
Alignment of Motivators with Research Integrity	Integrates motivational and ethical systems	Aligns achievement, recognition, responsibility, autonomy, and growth with rigorous and responsible research processes	Reduces separation between professional success and research integrity	P8
Internalized Commitment and Sustainable Research Excellence	Represents the developmental outcome of the framework	Integrates ethical safeguards with intrinsically meaningful scholarly practice	Supports credible, rigorous, responsible, and sustainable research excellence	P9

5. Discussion and Conclusion

5.1. Discussion

Research ethics has traditionally been concerned with protecting the credibility of

scholarly work through standards of responsible conduct and the prevention of misconduct. That function remains indispensable. Evidence concerning fabrication, falsification, questionable research practices, and other forms of problematic behavior demonstrates why research communities cannot rely on individual goodwill alone (Martinson *et al.*, 2005; Fanelli, 2009; Bouter *et al.*, 2016; Gopalakrishna *et al.*, 2022). The argument developed in this study does not challenge the necessity of these safeguards. It asks a different question: whether preventing unethical research and encouraging researchers to pursue excellent, responsible scholarship should be understood as the same motivational process.

Herzberg's Two-Factor Theory provides a useful distinction for addressing this question. Hygiene factors and motivator factors perform different functions rather than representing simply stronger and weaker versions of the same influence (Herzberg *et al.*, 1959; Herzberg, 1968). Extending this logic to research ethics allows ethical safeguards to be understood as foundational conditions. Their importance becomes most visible when they are absent or violated. Research affected by fabrication, falsification, plagiarism, or

other serious integrity problems may lose credibility regardless of its apparent originality or significance. Ethical compliance therefore protects the legitimacy of scholarship, but the framework developed here argues that protection and motivation should not be treated as equivalent.

This interpretation also changes the meaning of the term “hygiene” when applied to research ethics. It does not indicate that ethics is peripheral, routine, or less valuable than scholarly motivation. A foundation may not be the most visible part of a structure, but the structure cannot remain secure without it. Research ethics performs this foundational role by establishing conditions within which scholarly achievement can remain credible. Excellence cannot compensate for compromised integrity, just as integrity alone cannot guarantee excellence.

The second part of the framework addresses what happens above this ethical foundation. Achievement, recognition, responsibility, autonomy, and professional growth were conceptualized as motivational conditions

through which researchers may develop a deeper relationship with responsible scholarship. The distinction is particularly meaningful when external compliance is compared with internalized commitment. Avoiding misconduct because of possible sanctions can protect research from

unacceptable behavior. Choosing rigorous methods, reporting findings faithfully, accepting responsibility for difficult decisions, and valuing transparency because these practices are part of being a good researcher represent a different level of engagement.

Academic environments can either support or complicate this transition. Research on organizational justice and research climate has shown that integrity is situated within broader institutional conditions (Martinson *et al.*, 2006; Martinson *et al.*, 2013; Crain *et al.*, 2013; Haven *et al.*, 2019). Researchers' accounts of responsible research climates further demonstrate that ethical research is experienced within social and organizational environments rather than only through formal policy documents (Haven *et al.*, 2020). At the same time, competition and publication pressure may create incentives that do not always align comfortably with careful research practice (Anderson *et al.*, 2007; Fanelli, 2010; Tjldink *et al.*, 2014).

The central issue is consequently not whether researchers should be motivated. Researchers are already surrounded by incentives. The more consequential question concerns what those incentives encourage them to value. Achievement defined predominantly through publication volume sends a different signal from achievement associated with rigorous and meaningful scholarship. Recognition attached only to visible outcomes differs from recognition that also acknowledges responsible research processes. Autonomy without accountability may weaken ethical safeguards, whereas responsibility without genuine decision-making authority may become another administrative burden. The five motivators proposed in this study therefore depend on alignment with research integrity rather than their mere presence.

Such alignment provides the basis for the movement from compliance to commitment. Compliance remains necessary because research communities need enforceable ethical boundaries. Commitment adds something that rules alone cannot guarantee: a researcher's willingness to regard the integrity of the work as part of the value of the work itself. Once that connection develops, research ethics is no longer positioned only

outside the researcher as an institutional demand. It can become part of scholarly identity.

5.2. Theoretical Implications

The primary theoretical contribution of this study is the extension of Herzberg's Two-Factor Theory into research ethics. This extension is deliberately functional rather than literal. Herzberg *et al.* (1959) did not classify research ethics as a hygiene factor, and the present study does not attribute such a claim to the original theory. Instead, it uses the distinction between conditions that prevent negative outcomes and conditions that encourage positive motivation to explain two functions that are often discussed together in research environments.

This separation provides a way to explain why stronger compliance does not necessarily produce stronger scholarly motivation. Ethical policies can successfully define boundaries and reduce ambiguity without automatically increasing researchers' sense of achievement, ownership, or professional growth. Conversely, a highly motivated researcher does not become exempt from ethical standards. The two-factor interpretation therefore avoids treating ethics and motivation as substitutes.

A second contribution lies in connecting research integrity with the design of academic motivation. Existing research has examined organizational climate, perceived justice, competition, publication pressure, misconduct, and questionable research practices (Martinson *et al.*, 2006; Anderson *et al.*, 2007; Crain *et al.*, 2013; Tjldink *et al.*, 2014; Gopalakrishna *et al.*, 2022). The present framework brings these concerns into a motivational structure and asks how academic systems can make professional achievement compatible with responsible research. This shifts attention from misconduct prevention alone toward the conditions under which integrity can acquire positive professional meaning.

The framework further distinguishes ethical acceptability from research excellence without separating them. Research ethics establishes a necessary floor. Motivational conditions create opportunities to move beyond that floor. Sustainable research excellence emerges conceptually when credibility, rigor, meaningful

contribution, and professional commitment reinforce rather than compete with one another. This distinction offers a theoretical bridge between research governance and researcher development.

5.3. Practical Implications

For universities and research institutions, the framework suggests that research integrity policy should extend beyond increasing the number of rules or training requirements. Clear policies remain necessary, but institutions can also examine whether promotion, evaluation, mentoring, and recognition systems communicate values consistent with those policies. A university cannot reasonably expect researchers to prioritize careful scholarly processes while simultaneously signaling that professional success depends almost entirely on rapid and numerous outputs.

Journals occupy another important position. Editorial policies establish boundaries for acceptable publication, yet journals can also make responsible research practices more visible. Transparent reporting, appropriate openness, carefully conducted replication, and rigorous work producing unexpected or null findings can be treated as legitimate forms of scholarly contribution rather than as secondary outcomes. The specific mechanisms will differ across disciplines, and the present conceptual study does not prescribe one universal model.

Research leaders and mentors can influence the same process at a more immediate level. Professional development that combines methodological competence with ethical reasoning may help researchers understand not only which practices are prohibited but why particular decisions protect the credibility of their work. Early-career researchers may especially benefit from opportunities to exercise appropriate autonomy while receiving guidance and accepting responsibility for their choices. In such environments, ethics education becomes part of learning how to become a researcher rather than merely learning how to avoid misconduct.

None of these implications requires abandoning accountability. The practical objective is balance. Institutions need safeguards strong enough to protect integrity and motivational structures

capable of making rigorous, responsible scholarship professionally meaningful.

5.4. Limitations and Future Research

The conceptual nature of this study establishes its most important limitation. The proposed relationships have not been empirically tested, and the nine propositions should therefore be understood as theoretical statements rather than demonstrated causal relationships. Whether research ethics is experienced in a manner consistent with the proposed hygiene function, and whether the five motivator factors contribute to internalized ethical commitment, remains open to empirical examination.

Herzberg's framework also originated in a work context different from contemporary academic research. Extending its functional logic to research ethics provides theoretical possibilities, but the correspondence should not be assumed to be complete. Researchers operate within disciplinary norms, institutional hierarchies, funding structures, collaborative arrangements, and national research systems that may influence how ethical safeguards and motivational conditions are experienced. Haven *et al.* (2019), for example, reported differences in perceptions of research integrity climate across academic ranks and disciplinary fields, highlighting the importance of contextual variation.

Future studies could operationalize the proposed constructs and examine their relationships across different research environments. Survey research could investigate whether perceptions of ethical safeguards, achievement, recognition, responsibility, autonomy, and professional growth are associated with internalized ethical commitment. Qualitative interviews could explore how researchers distinguish between complying with institutional requirements and personally valuing research integrity. Comparative studies across academic ranks, disciplines, institutions, or national contexts may reveal whether the proposed relationships differ according to career and organizational conditions.

Longitudinal and intervention-based research would provide an additional step. Changes in evaluation criteria, mentoring arrangements, recognition practices, or researcher autonomy

could be examined over time to determine whether they correspond with changes in ethical commitment and responsible research practices. Such work would move the framework from conceptual development toward empirical refinement while preserving the distinction between the protective function of ethical safeguards and the developmental function of scholarly motivation.

5.5. Conclusion

Research ethics is indispensable, but indispensability should not be confused with motivational sufficiency. Rules against fabrication, falsification, plagiarism, and other unacceptable practices protect the credibility of scholarship. other. Motivation without an ethical foundation cannot secure responsible research, while compliance without meaningful motivation may leave researchers at the minimum boundary of acceptable conduct.

The deeper implication concerns how researchers come to understand ethics itself. A researcher who rejects fabrication only because it may lead to punishment stands in a different relationship to research integrity from a researcher who rejects fabrication because falsified evidence destroys the meaning and credibility of the work being pursued. The observable behavior may initially appear the same, but the source of commitment is not. Sustainable ethical cultures depend not only on making misconduct costly but also on making integrity meaningful.

Research institutions therefore face a broader task

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- They establish the conditions research cannot responsibly do without. Their successful operation, however, does not automatically create curiosity, intellectual responsibility, meaningful achievement, or a lasting commitment to research excellence.
- The conceptual framework developed in this study offers a different way to understand that distinction. Research ethics is positioned as a foundational hygiene condition, while achievement, recognition, responsibility, autonomy, and professional growth represent motivational conditions capable of connecting integrity with the experience of scholarly work. Neither side can perform the function of the
- than enforcing compliance. They must protect the ethical foundation of scholarship while creating conditions, in which responsible research can also represent achievement, earn recognition, carry genuine responsibility, permit appropriate autonomy, and contribute to professional growth. When those conditions are aligned, ethics and excellence no longer need to appear as separate institutional objectives.
- Research ethics does not create excellence by itself. It creates the conditions under which excellence can emerge. The movement from compliance to commitment begins when researchers are not only required to protect those conditions, but come to regard their protection as inseparable from the kind of scholars they seek to become.

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