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Generational Dynamic Convergence as a Mechanism for Reducing Intergenerational Friction

Rendy Soewitoardjo[1*]
Universitas Ciputra Surabaya, Indonesia

Thomas Stefanus Kaihatu[2]
Universitas Ciputra Surabaya, Indonesia

Christian Herdinata[3]
Universitas Ciputra Surabaya, Indonesia

***Corresponding author:**
Rendy Soewitoardjo, Universitas Ciputra Surabaya, Indonesia.
✉rsoewitoardjo@student.ciputra.ac.id

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Abstract

Background: As organizations play to the strength of generational diversity while working through challenges towards productivity and cohesion, generational diversity is a two-edged sword in the contemporary multigenerational workplace.
Objective: This study seeks to create and validate the Generational Dynamic Convergence (GDC) construct that establishes the level of multigenerational diversity so as to diminish intergenerational friction and improve organizational performance in family-owned business in Surabaya, Indonesia.
Methods: GDC encompasses four interconnected dimensions based on theories of social behavior, organizational culture, and generational identity: Environmental Perception, Innovation Implementation, Generational Inclusion, and Communication Styles. The reliability and relevance of the GDC dimensions are validated by an Exploratory Factor Analysis (EFA) of data from 120 family-owned businesses in Surabaya, Indonesia.
Results: Results indicate that GDC has the ability to bridge the generational gap, promote cooperation, and can be the solution to generational friction by harnessing the respective strengths of Baby Boomers, Generation X, Millennials, and Generation Z and can, as such, serve as a catalyst in creating inclusive, adaptable, resilient, and high-performing organizational cultures. This can be avoided in future consideration as the framework can be extended to different geographical and organizational contexts, making the results and conclusions more generalisable and useful.
Conclusion: This research is the first to both identify and validate the GDC construct through EFA and in doing so reveals four distinct dimensions of GDC and show that generational convergence can enhance collaboration, innovation and performance and simultaneously reduce intergenerational conflict.

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INTRODUCTION

Organizations are compelled to adjust to changing workplace demographics since we are now at a time when multiple generations of workers have convened together (Sulaeman et al., 2025). While generational diversity brings several opportunities, it can be a challenge in creating a common organizational behavior that supports productivity and collaboration (Chaudhary, 2025). The presence of greater than three generations McGuire et al., (2007) in the dynamic workplace creates challenges and opportunities to engage the diversity of generations present in the workforce. Generational gaps level to create innovation as well as considerable organizational tension (Kwiecińska et al., 2023). Despite the increasing interest in generational diversity, current conceptual models do not have an integrative model that explains how generational groups can

come together rather than clash. While prior models such as the TPB or TRA focus on the individual behavioral intention they do not consider the intergenerational characteristics at the organizational level (carried on to the next generation). This observed gap is what inspires the creation of the Generational Dynamic Convergence (GDC) framework.

Generational variations arise because of differing historical, sociological, and technological influences which impact work values, attitudes, and methods used to perform tasks (Okros & Okros, 2020). The study by Rafiki & Hartijasti (2022) revealed the greater expectation of Gen Z employees from material compensation, intangible rewards, connection and deep relationships with co-workers and leisure at work then compare to Gen X employees. Gen Y employees also expect more leisure at work than their Gen X counterparts. With these different viewpoints at play, this is when the frictions occur and communication breakdowns, lack of team collaboration or resistance to change may happen (Skyberg, 2022). This cycle of generational conflict highlights an ongoing difficulty of how the characteristics, values, and subsequent reaction to work can create tensions of misunderstanding with each generational cohort (Lloyd-Jones & Worley, 2018). The differences in the nature of their attributes and preferences which effectively divide organizational members of between generations definitely becomes impediments to effortful cohesion of organization.

The generational friction has become the serious problem suffered by organizations due to the increasing level of generations working with each other at the same place (Appelbaum et al., 2022). Interaction between people of different generations, each with their own values, styles of communicating, and expectations regarding people at work, can create pressures on teams and organizations, which is known as generational friction (Urick, 2020). This friction arises from a misunderstanding or better say a disparity in priorities among generations that can negatively impact collaboration, innovation, and overall organizational performance (Appelbaum et al., 2022).

Tabel 1. Central Bureau of Statistics 2024 About Indonesian Labor Forces According to Age Group

Indonesian Labor Forces According to Age Group (February 2024)										
Age	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60+
Count	4.793.947	13.629.983	16.629.438	16.539.766	16.930.409	16.379.755	15.548.307	13.596.816	10.935.536	17.528.089

Table 1 interpreted from Central Bureau of Statistics (2024) reflect that Indonesia as a country needs to confront the reality. It covers all generations, from the youngest, Generation Z (ages 15–24) to the oldest, Baby Boomers (60+). These statistics provide clarity around the generational makeup of the workforce (and how what each generation would require to integrate) and potential impact to organizational culture, working patterns and inter-generational dynamics. According to age, Gen Z(15–24 Years Old)-18,423,930, Millennials(25–39 Years Old)-50,099,613>Gen X(40–54 Years Old)-45,524,878>Baby Boomers 28,463,625. As highlighted in the table, Generation Z (18,423,930) is now creeping up in terms of labor force numbers in the USA, and thus becoming a larger workplace influence with Millennials and Generation X following closely behind. Gen Z are slowly becoming integrated in the workforce, and with each year that passes they catch up more to generations who have been working longer, changing the makeup of organizations with each generation.

With the anticipated rise of Gen Z workers comes the possibility of cultural and generational transitions within organizations as they often contribute distinct values, work ethics, and technology preferences from their pre-existing generations (Agarwal & Vaghela, 2018). This mixed bag of generations rests both as a challenge and an opportunity in the workplace. While there may be battle lines drawn around work values, communication styles and expectations within organizations, there are also opportunities to leverage intergenerational collaboration to promote innovation, knowledge transfer, and resilience (George et al., 2024). More than any other factor, the organization's culture plays an important role in determining how employees from varied generations will work together (Burton et al., 2019).

In this article, I aim to provide the details of the essential idea of Generational Dynamic Convergence (GDC), that most employees need in the workplace today and help them find the

balance to create and maintain peaceful and productive workplaces. This method is based on the fact that every generation Baby Boomers, Gen X, Millennials (Gen Y) and Gen Z has its own values system, work expectations, and communication style based on their particular social, economic, and technological history.

GDC aims to recognize such patterns or generational expectations or "fractals" and create a path that aligns differences to minimize conflict and enhance organizational effectiveness. This is especially timely for Indonesia, where there has been an increase of a diversified workforce with Baby Boomers and Gen X in leadership levels, and with Millennials and Gen Z being the key players in digital transformation.

As a result, this research has two research objectives: 1) to conceptualize and develop the construct of Generational Dynamic Convergence (GDC) by uncovering its theoretical underpinnings and its fundamental dimensions; 2) to test the conceptualization of GDC by conducting Exploratory Factor Analysis (EFA) using data from family owned businesses in Surabaya, Indonesia, assuming the role of exploratory factor analyser as per; This validation of the dimensions of the framework is likely to add to the organizational behavior literature by giving it a framework for understanding intergenerational diversity management.

LITERATURE REVIEW

While prior research focused on generational diversity has predominantly tackled differences in generational work values Rafiki & Hartijasti (2022), communication styles King (2017), and conflict patterns. Nonetheless, these studies mainly descriptive studies on generational gap tend to lack a holistic perspective on convergent. Our limitation is addressed in the GDC framework, which integrates disparate theoretical streams (social behavior, organizational learning, and generational identity) into a single framework that indicates how generational diversity can transform from a frictional element to an element of organizational performance.

The Founding Theory

Generational Dynamic Convergence (GDC) is an integrative construct that combines different bases from foundations of social behavior, organizational culture, and generational identity to explain how the generational diversity of an organization contributes to coherence and flexibility. Grounded in Herd Behavior, GDC explores how people of different ages can align with group norms in ways that bring about a more harmonious organizational culture. Herd behavior: The ability of humans to imitate the actions and decisions of a larger group of groups of people, often subconsciously, rather than relying on their own judgment (Raafat et al, 2009). People decide to imitate the behavior of others under the belief that the collective has additional or superior information, or because it is psychologically comforting to be with the majority.

It also incorporates the Social Influence Theory Kelman (1958) and the Social Comparison Theory Festinger (1954) arguing that generational cohorts compare and influence each other to conform with the ideal type of behavior so as to minimize friction and maximally promote cooperation. Kelman (1958) SOCIAL INFLUENCE THEORY. Kelman's (1958) social influence theory is about how and why individuals conform to the expectations, attitudes, or behaviors of others in a social context. Kelman (1958) identified three major forms of social influence that produce conformity, and from this he proposed three types of conformity: compliance, identification, and internalization. They in turn run the gamut from the surface concession of norms to the internalized personal embrace of group ideologies and values. Festinger's (1954) Social Comparison Theory indicates that humans possess a natural tendency to compare themselves with others to assess their own abilities, opinions, and even self-worth. Such a comparison aids an individual in understanding where they stand in the social hierarchy, if they are doing well, and even creating correct determinations of the self.

Furthermore, GDC includes the Theory of Planned Behavior Ajzen Icek (1991) and the Theory of Reasoned Action Fishbein (1980) to emphasize that attitudes, subjective norms and perceived control predict generational behavior in the organization. The Theory of Planned Behavior (TPB), proposed by Icek Ajzen in (1991), was developed from the earlier Theory of Reasoned Action (TRA) by Ajzen and Martin Fishbein in (1980). Both of these theories aim to describe how attitudes at the personal level, as well as social influences and intentions, play a part

in our behavior, but they differ from one another in scope. According to the Theory of Reasoned Action, the strongest predictor of whether or not a person will actually engage in a specific behavior is his (or her) intention to engage in that behavior, which is determined by two main factors: his (or her) attitude towards the behavior (evaluation is positive or negative) and subjective norms (perceived social pressure to engage in the behavior, or to not engage in it). This means the Theory of Planned Behavior (TPB) which incorporates over three decades of research driven adaptations to TRA extracts a further component: perceived behavioral control. This concept added by Ajzen considers instances in which people want to engage in some behaviour but simply cannot do so based on external or internal constraints, for example, time, resources or self-confidence.

GDC analyses behavior through the prism of Social Identity Theory (SIT) Tajfel (2001) finding that generational identity can directly affect behavior but also that balancing the personal generational identity with that of a larger collective organizational identity can enhance inclusion and lessen tensions between the generations. Social Identity by itself is the sense of who we are, based on the groups to which we belong; for example our religion, nationality, or profession. SIT posits that people identify themselves and others with in-groups (groups they identify with) and out-groups (groups they do not identify with), and this plays a role in identity and self-esteem. This type of categorization frequently results in in-group favoritism and can lead to out-group bias, as group members aim to raise their own group status to uphold a positive social identity, and positively view in-group members (and negatively off-category individuals).

Another important theory that relates to GDC and the concept of understanding across generations is the Communication Accommodation Theory (CAT), which examines how individuals from different generations adjust their communication style to achieve mutual understanding and cooperation (Iqbal, 2024). CAT (Communication Adaptation Theory) by Giles, looks at how humans adapt their communication when they interact with others, whether it be to converge or diverge. As per CAT, people can adapt by way of convergence (making their speech or behavior to most resemble that of their conversation partner) for better social connection, approval, or to shrink social distance. And on the other hand, they can use divergence (emphasizing differences in manner of speaking or acting) to reaffirm their social identity, to emphasize their own individuality or to make social distance. Referred to as communicative adjustments, CAT traces individual behavioral adaptations to the social dynamics surrounding them, enabling people to navigate relationships while managing perceptions of themselves in different social contexts.

GDC argues that from an organizational learning perspective, multi-generational diversity encourages best practice sharing and learning and thus facilitates continuous improvement and adaptation, promoting resilience to the pernicious effects of change (Dwyer & Azevedo, 2016). Organizational Learning in itself stresses the process in which organizations learn, adapt, and become better through its members experience and knowledge. Where single-loop learning is when organizations respond to a problem by changing a behavior without question underlying assumptions, second-loop learning takes the bigger picture approach- examining who is running the game, leaning towards a focus on related error correction and organizational efficiency, Argyris introduced these concepts as a duel, however, it would be beneficial to redefine the term a bit and perhaps rely on the many, rather than the two. Double-loop learning, on the other hand, means that organizations not only deeply reflect and dig into what the problem might be, they challenge basic assumptions or policies or practices which brings about more substantial change and innovation. He claimed that double-loop learning is needed for long-lasting adaptation and development because it creates an environment where critical thought, open communication, and adaptation to complicated problems may thrive.

Theory of Generation Eyerman (1998), Life Course Perspective (2007), and Generational Cohort Theory Moss (2010) as the lens by which to consider the traditions and experiences of each generation. Laufer (1974) Theory of Generation- suggests that children born from a specific historical and social backdrop share identity, collective consciousness, and ideologies from generational units, responding uniquely to the events around them. The role of context in the Life Course Perspective, by Glen Elder (2007), suggests that the life course of every person is affected by historical context, timing and social forces: The life course of every person develops through the interaction of the influence of age, culture, and the historical time and place. Finally, Okros

(2019) developed the Generational Cohort Theory, which suggests generations progress through repeating cycles of archetypes (e.g., hero, artist) at key moments in formative years. The shared experiences lead to unique values, attitudes, and behaviors within each cohort which informs how they interact with society throughout their lives.

Lastly, Cultural Hegemony George (2024) provides examples of how top-down generational viewpoints can influence the workplace culture, while GDC proposes a more equal tone where the strengths each generation brings with them into the workplace allows for a balanced culture and innovative changes. However, the Cultural Hegemony denotes a certain group of cultural beliefs, values, and practices that strengthen the power of a dominant or ruling class. Williams broadens upon the idea set forth by Antonio Gramsci, that culture is not merely a reflection of social structures; it is an active tool for the reproduction and maintenance of social order. The values of the dominant culture are rendered "natural" or "normal" in this framework, shaping the minds of individuals to see the world through the lens of existing power structures, making resistance difficult if not impossible. Social institutions such as education, media, and family continually reinforce this hegemony working to ensure the status quo is maintained in part by presenting the ruling class as acting in the interest of all.

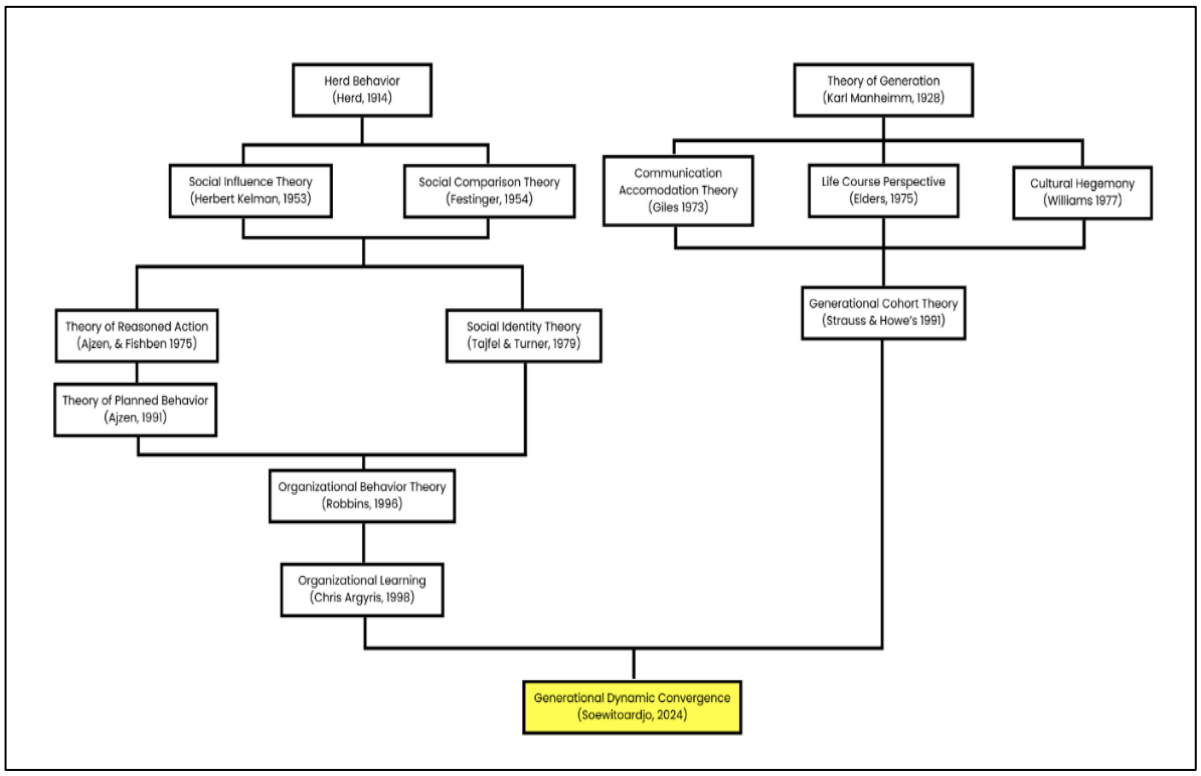

Figure 1. State of The Art

Dynamism In Generational Dynamics A model of collective generational diversity convergence synthesizes these theories showing that, rather than creating a source of disunity, generational diversity is expected to create a dynamic, adaptive environment in organizations. Using collective behaviors, a common culture of values, inclusive communication, and intergenerational regard as tools, GDC should develop a workplace of generational diversity that contributes to organizational resilience, creativity, and functionality.

Generational Dynamic Convergence (GDC) is an approach for appreciating different generations and how they can come together in an organization to bring organizational growth, innovation, and adaptability. Based on findings from different theories of social behavior, organizational culture, and generational identity, GDC claims that when properly guided, generational diversity can reinforce organizational performance rather than causing friction. It describes four key dimensions: Environmental Perception, Innovation Implementation, Generational Inclusion, and Communication Styles, which each act as a basis for intergenerational collaboration. As such, each of these dimensions in turn is explained below including the theoretical basis, indicators, and justification.

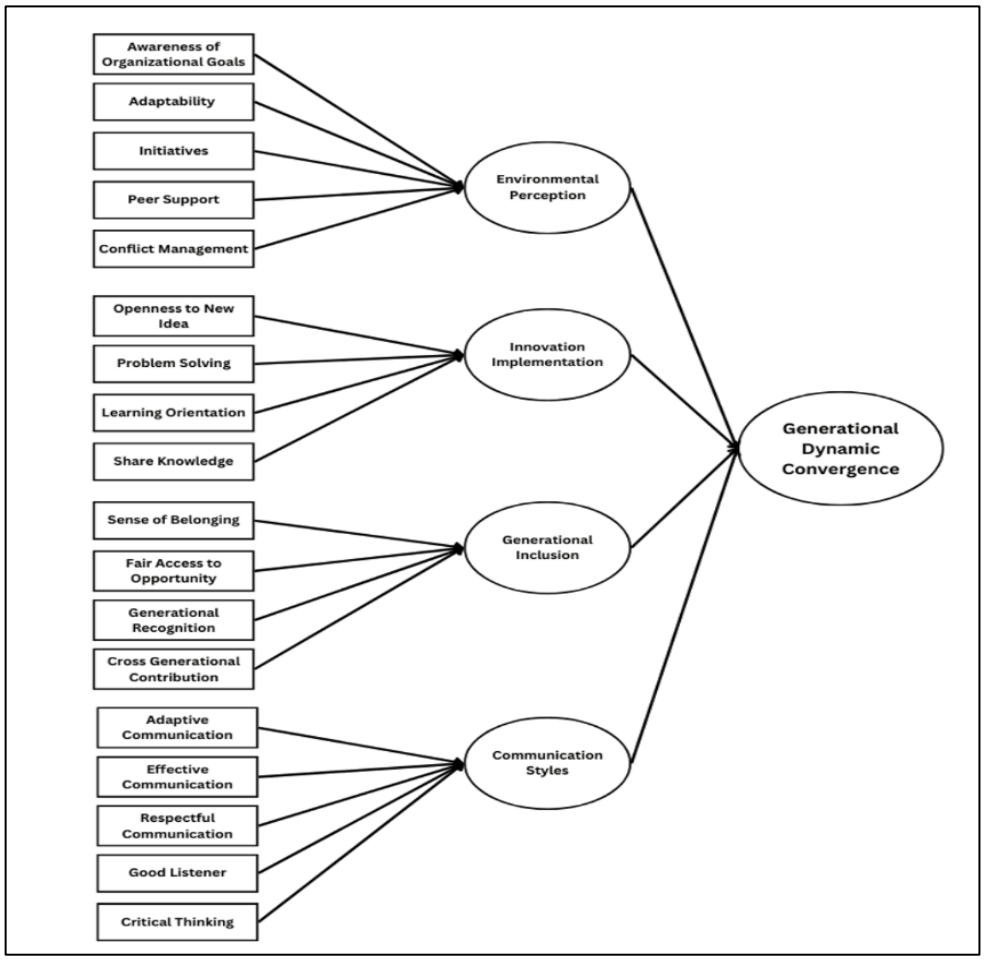

Figure 2. GDC Model Construct

The theoretical underpinnings of incorporating expectations into the GDC framework are based on the Theory of Planned Behavior (1991) by Ajzen, in which expectations operate as a form of perceived behavioral control that can influence the way people from multiple generations enter an intergenerational interaction and the way they react to that interaction. Social Exchange Theory Blau (2017) further strengthens this relationship by suggesting that individuals develop expectations about the give and take of workplace relationships and is reflected in their willingness to collaborate intergenerationally.

Environmental Perception (EP)

The source of this dimension is Social Influence Theory Kelman (1958), Herd Behavior Raafat (2009) and Social Comparison Theory Festinger (1954), which explains how a person's perceptions and actions are affected by the reference group. Kelman (1958) noticed that people react to social norms/situations by conforming via compliance, identification, or internalization, which has an impact on how they look at their environment and how they act. This introduces Herd Behavior Theory after Raafat (2009) which asserts that in ambiguous situations groups are often followed by individuals, creating intergenerational convergence of behaviours within an organization. Social Comparison theory Festinger (1954) provides that people compare themselves to others to evaluate their behavior and attitudes, which impacts their propensity to conform with group normative behavior. When combined, these theories highlight how social environments shape generational cohorts that perceive and respond to specific environmental events, resulting in collective actions toward organizational renewal.

Indicators:

Knowledge of Company Objectives: This measure examines how each generation comprehends the master purpose and intent of the organization (EP1).

Adaptability: It assesses how well an individual can adjust their behaviors and practices to what

the organization wants them to (EP2).
Peer support: This represented the perception of support provided by colleagues (EP3).
Engagement: This metric is related to the level of engagement of individuals on team projects and organizational activities (EP4).
Conflict Management: This tactic assesses how generations postpone and confront uncertain situations within an organization (EP5).

These measures are based on the concept that social influence and common perceptions of the environment shape behavioural change. Generational groups range in outlook, but can find commonality in purpose and persuasion, ultimately lowing tensions between each cohort.

Innovation Implementation (II)

This dimension is grounded the Theory of Planned Behaviour Ajzen Icek (1991), and Life Course Perspective (Elder, 1975) and Organizational Learning Theory (Argyris, 1997). It is an index about the ease and approaches of various generations within an organization to adapt to innovation, the impact of comfort and purpose of innovation across the generations as one of the wider driver of generational behavioural aspects. The implementation of innovations requires an independent willingness to develop and adapt across generations. The Theory of Planned Behavior (TPB) Ajzen Icek (1991) proposed that the intention of an individual to adopt change is shaped by attitude towards the behaviour, the perceived social norms and the perceived behavioural control. Generations intersect each life course perspective elder (2007) provides insight into how experiences vary and how receptivity to new ideas tend to differ with the generation. At the same time, Organizational Learning Theory Gorman (2004) reminds us that we need double-loop learning for profound change, that is, understanding and behaviours should be adaptive. Thus, these theories together convey that innovativeness is not just about individual willingness but also a shared generational learning experience with sufficient organizational support.
Indicators:

Openness to new ideas This measure describes the extent to which people of different generations are open to adopting new ideas or experiments (II1).

Problem Solving Existence is intended as a strategy for effectively cross-generational teams work together to solve complex challenges (II2).
Learning Orientation: This measure represents willingness to learn new methods and processes to assist organizational changes (II3).
Knowledge Sharing: MSK this is a degree by which Personnel amongst generations share data and talents (II4).

Yet, we know such intentions people's plans to engage in a behaviour and perceived control over an opportunity for change are some of the strongest predictors of uptake, particularly in multigenerational settings with varying receptivity to innovation. A workplace that promotes cross-generational learning provides a great avenue for knowledge sharing – younger employees often bring fresh perspectives to the table while older employees can provide valuable ideas based on experience.

Generational Inclusion (GI)

Based on Social Identity Theory Tajfel (2001), and Cultural Hegemony, this dimension emphasizes the importance of inclusivity practices to address generational gaps among the workforce. Recognizing and celebrating diversity within generations so that identity and values rooted in generations become where every employee feels valued will help organizations as a whole. Theory of Social Identity (SIT) Tajfel (2001) states that people get part of their self-concept through their group memberships (generational identities included). Belonging is heightened when these identities are recognized and appreciated. Cultural Hegemony Sasaki (2024) provides an interesting take on how dominant cultural narratives can marginalize less powerful groups, arguing that organizations must take care to balance the generational contributions to avoid having another group's values become dominant. In general, these theories indicate that creating an inclusive environment where generational identities are valued and respected can mitigate intergenerational tensions and conflicts that detract from organizational effectiveness.
Indicators:

Community Indicator (GI1): Sense of Belonging:This indicator measures the sense of belonging among employees, especially those who belong to different age cohorts.
G1: Fair Access to Opportunities Fair and equal distribution of opportunities for career advancement, training and access to resources (GI2)
Generational Recognition: This measure depicts the recognition of the unique set of skills, views, and accomplishments that each generation possesses (GI3).
GI4) Cross-generational collaboration: This indicator assesses the effectiveness of programs that promote learning and collaboration between generations

Rooted in social identity and acculturation theories, these indicators emphasize that inclusion initiatives can alleviate inter-generational conflict. Diversity of perspective and experience is invaluable when each generation feels heard, and has equitable access to opportunity across organizations.

Communication Styles (CS)

Informed by Communication Accommodation Theory Giles (1973) and Generational Cohort Theory, this dimension describes how each of the generational groups communicates and accommodate their styles in order for them to be understood by others. Communication plays a key role in bridging generational gaps, as the different generations may each prefer different types of communication and different levels of formality. According to Giles (1973), the Communication Accommodation Theory (CAT) proposes that speakers will adjust their communicative characteristics due to social context and relational goals, whether this be to converge (become more similar) or diverge (accentuate differences). According to Generational Cohort Theory, the ideal mode of communication from personal interaction to desktop to laptop to mobile device to social media to no communication at all varies within and between generations. When taken together, the theories imply that when we are aware of and adjust for how generations communicate differently, we can have better workplace relations and team unity.
Indicators:

Adaptive Communication: This is an indicator of a person who is keen to adapt their communication tools to also match the generations around them (CS1).

Concise Communication: This indicator underscores the importance of communicating the messages in a digestible form and taking into account cultural and age differences (CS2).

a. Polite Speech: The extent of adherence to the somewhat polite tone of voice and understanding of the generation-specific communication method of the counterpart (CS3).
b. Listening to Others: This indicator describes the capacity to listen to and show interes in other points of view (CS4).
c. Critical Thinking: It reflects the openness to be influenced by different generations of colleagues and the ability to influence the counterparts (CS5).

Such indicators reinforce the theory that humans adapt their speech according to social contexts. When employees can offer their personal communication style, mutual understanding is strengthened and the chance of fights from generational miscommunication is reduced.

METHOD

Aims to establish a reliable and valid measurement scale for the key constructs comprising the Generational Dynamic Convergence Variable. Scale development involved initial item generation in a review of existing literature. Other methods were used, such as expert consultations, to ensure that all question items were relevant and complete. These items were subsequently developed and assessed via an academic professor review and practitioner review by practitioners of applied and corporate business that had already been practitioners in the field for over 20 years to validate the content as appropriate to measure the respective phenomena.

A non-probability sampling aimed at family firms among small and medium-sized enterprises in Surabaya, Indonesia Family businesses in Surabaya have shown a unique multigenerational context, where different generations could hold ownership as well as managerial roles at the same time; therefore purposive sampling was selected. To be included, companies had to (a) have been in business for 10 years or more, (b) have interest in employing workers from at least two different generations (Millennials, Gen X, or Baby Boomers) and (c) have a minimum of 10 employees. The structured questioners were distributed through e-mail

and in-person visits, and data collection was carried out over a period of three months (Month–Month 2024)

This research adopts a target sampling method on family-owned business in Surabaya, Indonesia. Questionnaires were sent via email to 120 companies, specifically to directors and general managers who had active involvement in the strategic decision-making and operations of the company. This selection was made to guarantee that the subjects were able to furnish data containing a minimum of distortion, an advantage in ensuring the accuracy and relevance numbers with regard to the constructs being measured. The questionnaire used a 5-point Likert scale to measure the respondents' level of agreement or disagreement from a tone of "strongly disagree" to "strongly agree." While the measures were adapted from validated scales used in prior organizational behaviour studies, they were examined and contextualized for multigenerational dynamics inherent in family-owned businesses in Indonesia. Items were adjusted for cultural relevance through a back-translation procedure (English–Indonesian–English) and pretested with a pilot sample of 20 respondents representing diverse generational backgrounds. Minor wording adjustments were made to ensure clarity and cultural appropriateness while maintaining construct validity.

To achieve the objective of this article, an Exploratory Factor Analysis (EFA) was conducted on the data. Factor analysis is a statistical technique whose primary goal is to define the underlying structure between the variables in the analysis. Factor analysis provides a tool for analyzing the correlation structure of large numbers of variables, such as test scores, test items, and questionnaire responses, by defining sets of highly interrelated variables, called factors (Hair, 2009). Factor analysis techniques "take what the data gives" and do not impose *a priori* constraints on component estimates or the number of components to be extracted. EFA identifies relationships between latent factors and their indicators without an *a priori* model (pre-existing model). EFA is believed to be more accurate in detecting unexpected latent factors and factor loadings.

This study employed Exploratory Factor Analysis (EFA) to examine latent constructs within the dataset, starting with a rigorous assessment of data quality and sample adequacy. Two preliminary tests were used to ensure factorability: Bartlett's Test of Sphericity, which assesses the correlation matrix's deviation from an identity matrix, and the Kaiser-Meyer-Olkin (KMO) test, which evaluates sampling adequacy. High Bartlett's test (altboy) significance means adequate covariance is present to conduct a factor analysis, and KMO values above 0.6 are adequate, indicating variance is shared between the indicators. According to Lorenzo (2024), 50 observations were considered adequate and at least a ratio of 5 observation per variable is needed to provide valid results from EFA.

This study used Principal Component Analysis (PCA) for factor extraction. PCA is best suited for data reduction, where the factors contain specific and error variances (Gewers et al., 2021). The latent root criterion (eigenvalues > 1) and the scree plot test were used to decide how many factors were retained (factors are plotted to look for the point at which eigenvalues level out). In addition, this study also took into account factor rotation ease of interpretation, and selected the VARIMAX of orthogonal rotation. Retention decisions were further guided by high (≥ 0.5) factor loadings and communalities (≥ 0.5), while items having cross-loading were assessed carefully for inclusion or exclusion. The dimensions of the underlying factors were then represented by naming the factors according to their strongest loading variables.

Based on the theoretical framework outlined above, this study proposed the following research hypotheses to guide the EFA and validate the GDC construct:

1. H1: Environmental Perception (EP) is a valid and reliable dimension of the GDC construct.
2. H2: Innovation Implementation (II) is a valid and reliable dimension of the GDC construct.
3. H3: Generational Inclusion (GI) is a valid and reliable dimension of the GDC construct.
4. H4: Communication Styles (CS) is a valid and reliable dimension of the GDC construct.

RESULTS AND DISCUSSION

Results

The sample size was 120 respondents, and all respondents had completely submitted their answers without any error. All 120 respondents' answers were compiled for further analysis. The minimum factor loading criterion was set to 0.50. This is based on guidelines from

Hair et al. (2009), stating that a minimum of 120 samples is required to consider factor loadings of 0.50 and above as significant.

Assessing the appropriateness of EFA involves examining Bartlett's Test of Sphericity, which assesses the similarity of indicators to an identity matrix, which is a correlation matrix entirely of null values on the off-diagonals. A correlation matrix that is not significantly different from an identity matrix suggests that indicators do not share sufficient covariance to conduct an EFA. This condition will result in a non-significant Bartlett's Test of Sphericity, implying that EFA should not be performed. Bartlett's Test of Sphericity results were significant, $\chi^2(n = 120) = 2149.465$ ($p < .001$), which indicates its suitability for EFA. The Kaiser–Meyer–Olkin Measure of Sampling Adequacy (KMO-MSA), indicating the ratio of correlations and partial correlations that reflects the extent to which correlations are a function of the variance shared across all variables rather than the variance shared by pairs of variables, was 0.756. In this regard, data with KMO-MSA values above 0.700 are considered appropriate for EFA. Bartlett's Test of Sphericity and KMO-MSA results can be seen in Table 2.

Table 2. Bartlett's Test of Sphericity & KMO-MSA Results

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.767
Bartlett's Test of Sphericity	Approx. Chi-Square	2149.465
	Df	153
	Sig.	.000

Communalities of all items were above 0.50, implying sufficient explanation for them. Communality itself represents the amount of variance accounted for by the factor solution for each variable. Communality values are provided on Table 3.

Table 3. Communality Values

Communalities		
	Initial	**Extraction**
CS1	1.000	.624
CS2	1.000	.710
CS3	1.000	.807
CS4	1.000	.813
CS5	1.000	.753
II1	1.000	.754
II2	1.000	.903
II3	1.000	.865
II4	1.000	.846
GI1	1.000	.701
GI2	1.000	.874
GI3	1.000	.887
GI4	1.000	.845
EP1	1.000	.829
EP2	1.000	.781
EP3	1.000	.846
EP4	1.000	.755
EP5	1.000	.742

Finally, the factor solution derived from this analysis yielded four factors for the scale, which accounted for 79.636% of the variation in the data. Employment of principal component analysis and Varimax rotation in this EFA yielded four factors with eigenvalues larger than 1. The data is as follows:

Table 4. Total Variance Explained of Extracted Factors

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.102	39.453	39.453	7.102	39.453	39.453	3.975	22.082	22.082
2	3.669	20.386	59.839	3.669	20.386	59.839	3.706	20.588	42.669
3	2.303	12.794	72.633	2.303	12.794	72.633	3.530	19.609	62.279
4	1.261	7.004	79.636	1.261	7.004	79.636	3.124	17.358	79.636
5	.676	3.753	83.390						
6	.607	3.373	86.763						
7	.454	2.522	89.285						
8	.383	2.129	91.414						
9	.335	1.861	93.275						
10	.257	1.428	94.703						
11	.232	1.288	95.991						
12	.192	1.065	97.056						
13	.161	.895	97.951						
14	.131	.726	98.677						
15	.091	.506	99.183						
16	.066	.369	99.552						
17	.050	.280	99.832						
18	.030	.168	100.000						

In this first phase of EFA, all items had factor loadings above 0.50, which implied their significance. The highest factor loading was 0.918 (GI3) and the lowest one was 0.564 (GI1). All three items (GI1, EP1, & EP3) significantly loaded on two different factors. GI1 was cross-loaded on factors 3 & 4. Both EP1 & EP3 were cross-loaded on factors 1 & 4. Due to that reason, those items were put on deletion and further factor analysis excluding them was conducted. Rotated component matrix results from the first phase of EFA can be seen below:

Table 5. Final Results of Bartlett's Test of Sphericity & KMO-MSA

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
CS1		.773		
CS2		.825		
CS3		.894		
CS4		.900		
CS5		.862		
II1	.855			
II2	.866			
II3	.810			
II4	.848			
GI1			.564	.586
GI2			.899	
GI3			.918	
GI4			.893	
EP1	.629			.652
EP2				.861
EP3	.616			.678
EP4				.712
EP5				.636

The second phase of factor analysis yielded significant Bartlett's Test of Sphericity results, x2(n = 120) = 1622.545 (p < 0.000). The Kaiser–Meyer–Olkin Measure of Sampling Adequacy (KMO-MSA) value was 0.756, indicating appropriateness for EFA. Both results can be seen in Table 6.

Table 6. Final Results of Bartlett's Test of Sphericity & KMO-MSA

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.767
Bartlett's Test of Sphericity	Approx. Chi-Square	2149.465
	df	153
	Sig.	.000

All four factors explained a total of 81.031% of the variation among items in this study. Utilizing similar principal component analysis and Varimax rotation, this second phase of EA also generated four items with eigenvalues larger than 1. Results are listed in Table 7.

Table 7. Final Results of Total Variance Explained of Extracted Factors

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.102	39.453	39.453	7.102	39.453	39.453	3.975	22.082	22.082
2	3.669	20.386	59.839	3.669	20.386	59.839	3.706	20.588	42.669
3	2.303	12.794	72.633	2.303	12.794	72.633	3.530	19.609	62.279
4	1.261	7.004	79.636	1.261	7.004	79.636	3.124	17.358	79.636
5	.676	3.753	83.390						
6	.607	3.373	86.763						
7	.454	2.522	89.285						
8	.383	2.129	91.414						
9	.335	1.861	93.275						
10	.257	1.428	94.703						
11	.232	1.288	95.991						
12	.192	1.065	97.056						
13	.161	.895	97.951						
14	.131	.726	98.677						
15	.091	.506	99.183						
16	.066	.369	99.552						
17	.050	.280	99.832						
18	.030	.168	100.000						

In this second phase of EFA, there were no changes in all factor loadings' significance. GI3 still retained its highest factor loading (0.919), and the lowest one was 0.631 (EP5). Communalities of all items were above 0.50, implying sufficient explanation for them. Final results of communalities are listed in Table 8 below.

Table 8. Final Results of Communalities

Communalities		
	Initial	Extraction
CS1	1.000	.624
CS2	1.000	.710
CS3	1.000	.807

CS4	1.000	.813
CS5	1.000	.753
II1	1.000	.754
II2	1.000	.903
II3	1.000	.865
II4	1.000	.846
GI1	1.000	.701
GI2	1.000	.874
GI3	1.000	.887
GI4	1.000	.845
EP1	1.000	.829
EP2	1.000	.781
EP3	1.000	.846
EP4	1.000	.755
EP5	1.000	.742

This second phase of EFA had yielded four factors, signifying support for theoretical propositions in this research. Factor 1 included items CS1 to CS5, referring to Communication Styles (CS). Factor 2 included items II1 to II4, referring to Innovation Implementation (II). Factor 3 included items GI2 to GI4, referring to Generational Inclusion (GI). Finally, Factor 4 included items EP2 to EP5, referring to Environmental Perception (EP). The final set of items with their underlying constructs are listed in Table 9.

Table 9. Final Set of Items with The Underlying Constructs

Rotated Component Matrix				
	Component			
	1	**2**	**3**	**4**
CS1	.772			
CS2	.821			
CS3	.894			
CS4	.901			
CS5	.865			
II1		.850		
II2		.893		
II3		.834		
II4		.872		
GI2			.881	
GI3			.919	
GI4			.907	
EP2				.888
EP5				.631
EP4				.764

Discussion

In our Generational Dynamic Convergence (GDC) research, the quantitative exploratory factor analysis reveals some eye-catching information that has to do with the rejection of a few indicators. Communication Style is Factor 1. This factor is composed of five indicators Adaptive Communication (CS1), Effective Communication (CS2), Respectful Communication (CS3), Good Listener (CS4), and Critical Thinking (CS5). Results showed all indicators loaded significantly to their underlying constructs.

This kind of ageism from the communication styles point of view, often takes the form of age discrimination in the workplace. For instance, younger adults speak in a condescending manner, or too loudly or slowly, when interacting with older adults (King & Bryant, 2017). And contextualizing those communication style signifiers inside the organization should encourage every member to communicate well, especially with members from generations other than their

own. Tensions arising from miscommunication are suppressed to be as minimal as possible. Mutual understanding among organization members ultimately results in an exciting and friendly atmosphere. This finding advances knowledge in intergenerational workplace research by providing an empirically validated measure of communication accommodation across generational boundaries, extending Giles' (2013) Communication Accommodation Theory into an organizational management context.

Factor 2 focuses on Innovation Implementation. This factor consists of four indicators, namely "Openness to New Ideas" (II1), "Problem Solving" (II2), "Learning Orientation" (II3), and "Share Knowledge" (II4). All indicators significantly loaded to their underlying constructs. According to Barney's Resource-Based View (1991), an organization achieves sustainable competitive advantages by possessing valuable, rare, inimitable, and non-substitutable (VRIN) resources. Each organization member across generations has to be open to new ideas, work together to solve problems, share knowledge, and learn continuously in order to foster an innovation climate within the organization.

Consistent and continuous innovation makes the organization leap ahead, surpassing its competitors, and puts itself closer to its goals. In this dynamic and constantly changing business environment, competition is inevitable. Based on Dynamic Capabilities proposed by Teece (2016), organizations are required to develop unique capabilities which are difficult for competitors to imitate and to update their competencies to anticipate a rapidly changing business environment. The following dimension then contributes to previous innovation management literature by showing that innovation adoption within production is not just an individual-level phenomenon but rather fundamentally shaped by cross-generational processes of learning, thus extending Argyris' (1997) double-loop learning theory to a multi-generational context.

Factor 3: Generational Inclusion It is determined by three indicators namely, "Equitable Access to Opportunities" (GI2), "Inter-generational Acknowledgement" (GI3), and "Inter-generational Collaboration" (GI4). Here, the indicator (GI1) Sense of Belonging is highly correlated with variables besides its own underlying factor and so this indicator is also deleted. This may be due to the fundamentally individualistic nature of belonging. Belonging is primarily about personal relationships, and about feeling accepted things that are formed in deep-level interactions between individuals more than they can be in broad, systemic, organizational modes of inclusion. While the broader Generational Inclusion dimension does address aspects of inclusivity related to emotional associations, it also specifically focuses on structural and systemic notions like equitable opportunities and cross-generational collaboration. This distinction adds richness of nuance in generational diversity research, where distinction between personal belonging and structural inclusion is rather rarely made (until now).

Factor 4: Environmental Perception This includes five indicators namely, "Awareness of Organizational Goals" (EP1), "Adaptability" (EP2), "Peer Support" (EP3), "Initiative" (EP4), and "Conflict Management" (EP5). However, "Awareness of Organizational Goals" (EP1) and "Peer Support" (EP3) demonstrated a weak correlation with the dimension of Environmental Perception. Theoretical and empirical perspectives that we describe may help explain the mismatched outcomes we report.

For the Environmental Perception dimension, it is expected that individuals' perceptions of their environment are shaped by social and group-based influences. However, the indicator "Awareness of Organizational Goals" might be more related to personal motivation and leadership-driven communication rather than peer-driven influences.

Goal alignment often stems from top-down communication strategies, which do not align with the bottom-up, peer-influenced processes described in the foundational theories of Environmental Perception. Similarly, "Peer Support" was found to be more relevant to emotional well-being and job satisfaction. Smith (2021) suggest that peer support primarily enhances individual emotional outcomes rather than shaping environmental perception, which focuses on collective behavioral norms. Collectively, these results validate the four research hypotheses (H1 – H4), confirming the reliability and validity of Environmental Perception, Innovation Implementation, Generational Inclusion, and Communication Styles as dimensions of the GDC construct.

CONCLUSION

Using Partially Confirmatory Method (PCM) through Exploratory Factor Analysis (EFA), this study is successful in obtaining the evidence of the new Generational Dynamic Convergence (GDC) construct with data from 120 familyowned business in Surabaya, Indonesia. We identified and validated four major dimensions: Communication Styles, Innovation Implementation, Generational Inclusion, and Perception of Environment. All these dimensions together elucidate 81.031% of the total variance, validating that generational convergence is a significant predictor of collaboration and innovation while contributing to the improvement in organizational performance and a reduction in intergenerational conflict. Contingent on methodology, this study is also limited to one geographical context (Surabaya) and one type of organization (family-owned businesses), thus limiting generalizability of the results. Moreover, there are also limitations as its design is cross-sectional and solely measures self-reported data. Finally, to strengthen the GDC framework's generalizability, future research should use longitudinal designs, sample other types of organizations (e.g., state-owned enterprises, foreign investment companies, and government agencies), and test the framework in different national contexts.

Great Decision Conference (GDC) has its own limitations, of course, including the fact that it examines a type of -family business and zeroes in on one city. Our research can be extended to various types of organizations and areas for future research. Finally, mixed-methods approaches as a future perspective combining quantitative EFA with qualitative interviews can enhance the understanding of the failure of certain indicators to load and may enrich the measurement instruments [11]. The authors hope that GDC will spur organizational culture-shifting, catalyzing greater intergenerational collaboration and inclusion across the business landscape.

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AUTHOR CONTRIBUTION STATEMENT

Rendy Soewitoardjo - Conceptualization of the study, development of the Generational Dynamic Convergence (GDC) framework, data collection, EFA and writing, reviewing and editing of the original draft manuscript. Thomas Stefanus Kaihatu played a role in the development of the theory, the methodology, analysing data, supervision, writing original draft, writing-review & editing. Christian Herdinata assisted with validation of the research design, interpretation of the empirical results, and editing of the text for clarity and scientific quality. Authors PSD, ZSP, HJS, CAO and XSZ reviewed and approved the final manuscript.

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