The Relationship between Family and Community Resilience during the Developmental Transition of Emerging Adulthood

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Abstract

Resilience – the ability of a dynamic system to withstand, or adapt to, threats or risk to its stability, viability, or development – is an important component of environmental, economic, and social systems. While resilience has been studied extensively from individual-, family-, and community-level perspectives, substantially less work has been devoted to understanding resilience through a lens that crosscuts system levels so that an integrated model of resilience can be developed. This research aims to address this gap by identifying a link between family and community resilience as reported by 593 emerging adults. Results support the hypothesis that family resilience predicts community resilience during the transition to adulthood. The results support the proposed framework presented by Houston (2018) in which community resilience is positioned well for both top-down and bottom-up comparisons. The results are also consistent with the dynamic systems perspective which posits that resilience occurs as a result of interactions between and within the levels of complex systems to include the individual, family, and community. These results assist in understanding mechanisms by which resilience emerges from internal and external interactions between and within levels of each system and across developmental transitions.

Keywords: Emerging Adulthood, Resilience, Community Resilience, Family Resilience, Factor Analysis

Introduction

Resilience has been conceptualized as the ability of a dynamic system to withstand, or adapt to, threats or risk to its stability, viability, or development (Masten, 2014; Maurovic, Liebenber, & Feric, 2020; Walsh, 2021). Whether examined at the individual, family, or community level, resilience is assessed as a complex balance of internal and external protective versus risk factors (Ponce-Garcia, Madewell, & Kennison, 2015, Sabah, Khalaf Rashid Al-Shurjairi, & Boumediene, 2021; Wei, Han, & Gong, 2021). Within this framework, an understanding of resilience as an emergent property that develops as a result of the interaction between both risk and protective factors across and within systems has developed (Faulkner, Brown, & Quinn, 2018). However, more research is needed to better understand the relationship between resilience across the individual, family, and community levels (Houston, 2018; Koliou et al., 2018; Walsh, 2021). The purpose of the present study is to examine the relationship between family and community resilience in a sample of emerging adult college students during the transition to young adulthood in which reliance on the family of origin begins to shift toward connection to community (Bennett & Baird, 2006; Burt & Paysnick, 2012; Cousijn, Luiten, & Ewing, 2018; Masten et al., 2021).

Materials and Methods

Sample

Following Institutional Review Board approval, a survey was implemented on a convenience sample of 593 students 25 years or younger at a land-grant in the mid-south region of the U.S. The purpose of this cross-sectional tool was to ascertain the relationship between perceived family resilience and perceived community resilience among an emerging adult subset of the general population, many of which are living independently for the first time. Inclusion criteria were that all participants must be 18 years or older, able to read and write in English, and an undergraduate or graduate student at the university. Respondents completed a paper survey during class time in a variety of university courses from multiple departments and colleges including allied health, kinesiology, engineering, and social sciences.

Most participants were women (82%), 85% were white, and 94% had never been married. African-Americans and Hispanic/Latino participants both comprised 5% of the respondents. Nearly 85% reported that they had never experienced a disaster.

Measures

Participants responded to questions from two surveys, the Communities Advancing Resilience Toolkit (CART) and the Walsh Family Resilience Questionnaire (WFRQ).

CART. The CART portion of the survey used 27 items to assess five domains: (1) Connection and Caring (8 items), (2) Resources (4 items), (3) Transformative Potential (6 items), (4) Disaster Management (5 items), and (5) Information and Communication (4 items). Examples of questions in the domains include, "People in my community feel like they belong to the community" (connection and caring), "People in my community are able to get the services they need" (resources), "My community has effective leaders" (transformative potential), "My community tries to prevent disasters and community crises" (disaster management), and "My community keeps people informed about issues that are important to them" (information and communication). An additional 19 items utilized on the CART were outside of the five domains but assessed participants' perceptions about their community and their relationship within it, for a total of 46 items in the CART survey. The CART has demonstrated reliability and validity within several populations (personal conversation with B. Pfefferbaum, 2/4/22; Pfefferbaum, Pfefferbaum, Nitiema, Houston & van Horn, 2015; Pfefferbaum, Pfefferbaum, Zhao, van Horn, McCarter, & Leonard, 2016). Responses ranged from "strongly disagree" to "strongly agree" so that in all cases, higher numbers indicate higher levels of agreement and increased levels of perceived Community Resilience. No items were reverse scored.

WFRQ. The WFRQ is a 32-item, 5-point Likert style measure of family resilience, in which the responses range from "rarely/never" to "almost always" so that in all cases, higher numbers indicate higher levels of perceived Family Resilience in the three domains of Walsh's (2021) theoretical framework: belief systems, organization patterns, and communication/problem solving. The WFRQ has demonstrated, initially, reliability and validity in two non-U.S. populations (Dadashi Haji et al., 2018; Rocchi et al., 2017). Examples of items in the questionnaire include, "We keep hopeful and confident that we will overcome difficulties" and "Our hardship has increased our compassion and desire to help others." Higher scores indicate greater family resilience; no items were reverse scored.

Analysis

Following frequency analysis, exploratory factor analyses were conducted separately for the CART and WFRQ. Based on these results separate confirmatory factor analyses with one forced factor were then conducted.

A multiple regression analysis was then conducted using SPSS version 27 to test the hypothesis that family resilience predicts community resilience, after controlling for race and sex, both dummy coded dichotomously. The control variables were entered first, followed by FR. As usual, standardized regression coefficients will be used to interpret importance.

Results and Discussion

One strong factor emerged from the exploratory factor analysis of the CART, with a Kaiser-Meyer-Olkin (Pillai & Asalatha, 2020) of 0.955 and an eigenvalue of 12.24 that explained 43% of the variance. After removing one of the 28 items because of a low factor loading ("My community is at risk for disasters and community crises"), the factor loadings from the confirmatory factor analysis of a single factor ranged from 0.607 to 0.738 (Table 1) with a Cronbach's alpha (Pallai & Asslatha, 2020) of 0.953. The factor scores were then saved and used as the Community Resilience (CR) variable.

Table 1. Factor Analysis of WFRQ

Item	Factor Loading
15. We provide stability and reliability to buffer stresses for family members.	0.745
6. We encourage each other and build on our strengths.	0.739
29. We collaborate in discussing and making decisions, and we handle disagreements fairly.	0.738
9. We share important values and life purpose that help us rise above difficulties.	0.724
31. We celebrate successes and learn from mistakes.	0.720

30. We focus on our goals and take steps to reach them.	0.715
17. We can count on family members to help each other in difficulty.	0.713
24. In our family, we are clear and consistent in what we say and do.	0.706
7. We seize opportunities, take action, and persist in our efforts.	0.706
25. We can express our opinions and be truthful with each other.	0.701
11. Our challenges inspire creativity, more meaningful priorities, and stronger bonds.	0.701
5. We keep hopeful and confident that we will overcome difficulties.	0.692
27. We show each other understanding and avoid blame.	0.682
3. We approach a crisis as a challenge we can manage and master with shared efforts.	0.674
23. We try to clarify information about our stressful situation and our options.	0.668
4. We try to make sense of stressful situations and focus on our options.	0.666
16. Strong leadership by parents/caregivers provides warm nurturing, guidance, and security.	0.660
13. We believe we can learn and become stronger from our challenges.	0.659
18. Our family respects our individual needs and differences.	0.658
32. We plan and prepare for the future and try to prevent crises.	0.641
28. We can share positive feelings, appreciation, humor, and fun and find relief from difficulties.	0.633
26. We can share difficult negative feelings (e.g., sadness, anger, fears).	0.615
12. Our hardship has increased our compassion and desire to help others.	0.589
19. In our immediate and extended family, we have positive role models and mentors.	0.576
14. We are flexible in adapting to new challenges.	0.551
8. We focus on possibilities and try to accept what we can't change.	0.548
21. We have economic security to be able to get through hard times.	0.513
22. We can access community resources to help our family through difficult times.	0.488
20. We can rely on the support of friends and our community.	0.417

1. Our family faces difficulties together as a team, rather than individually.	0.406
10. We draw on spiritual resources (religious or nonreligious) to help up cope well.	0.393
2. We view distress with our situation as common, understandable.	

One strong factor emerged from the exploratory factor analysis of the WFRQ with a KMO of 0.955 and an eigenvalue of 12.84 that explained 40% of the variance. After removing one of the 28 items because of a low factor loading ("We view distress with our situation as common, understandable"), the factor loadings a confirmatory factor analysis of a single factor ranged from 0.393 to 0.745 with a Cronbach's alpha of 0.948 (Table 2). The factor scores were then saved and used as the Family Resilience (FR) variable.

Table 2. Factor Analysis of CART

Item	Factor loading
8. My community has effective leaders.	0.738
12. People in my community communicate with leaders who can help improve the community.	0.728
13. People in my community work together to improve the community.	0.724
23. Local information about issues in my community is generally accurate and fair.	0.718
15. My community develops skills and finds resources to solve its problems and reach its goals.	0.717
14. My community looks at its successes and failures so it can learn from the past.	0.716
24. Communication sources used by my community are effective in reaching residents. (Communication sources may include, for example, television, radio, newspaper, internet, telephone, local organizations.)	0.701
22. My community keeps people informed about issues that are important to them.	0.698
7. My community has the resources it needs to take care of community problems (resources include, for example, money, information, technology, tools, raw materials, services).	0.688
11. My community works with organizations and agencies outside the community to get things done.	0.686
16. My community has priorities and sets goals for the future.	0.682
2. People in my community are committed to the well-being of the community.	0.680
17. My community tries to prevent disasters and community crises.	0.667
27. People in my community can be trusted.	0.666
19. My community can provide emergency services during a disaster or community	0.664

crisis.

9. People in my community are able to get the services they need.	0.658
4. People in my community help each other.	0.657
1. People in my community feel like they belong to the community.	0.654
26. People in my community trust local officials.	0.648
10. People in my community know where to go get things done.	0.647
21. If a disaster or community crisis occurs, my community provides information about what to do.	0.645
20. My community has services and programs to help people after a disaster or community crisis.	0.639
25. Communication and information in my community focus on positive as well as negative issues.	0.636
18. My community actively prepares for future disasters and community crises.	0.632
3. People in my community have hope about the future.	0.630
6. My community supports programs for children and families.	0.621
5. My community treats people fairly no matter what their background is.	0.607
28. My community is at risk for disasters and community crises.	

The results of the regression analysis indicated that sex and race were significant predictors of CR, although together they only explained one percent of the variance. Their standardized (beta) coefficients were 0.08 and 0.09, respectively, indicating that one was not a much better predictor than the other.

When FR was added to the analysis, the model was statistically significant and the amount of variance in CR increased to 12%. The change in R^2 was also significant. Not surprisingly, the strongest predictor was FR (Beta= 0.336). As hypothesized, family resilience was positively related to community resilience.

Discussion

In response to the call for research examining resilience across levels within dynamic systems (Houston, 2018; Koliou et al., 2018), the present study investigated the relationship between family and community resilience during emerging adulthood. Results support the hypothesis that family resilience predicts community resilience during the transition to adulthood. The results provide evidence in support of the proposed framework presented by Houston (2018) in which community resilience is positioned well for both top-down and bottom-up comparisons. The results are also consistent with the dynamic systems perspective which posits that resilience occurs as a result of interactions between and within the levels of complex systems to include the individual, family, and community (Acosta, Chandra, & Madrigano, 2017; Distelberg & Taylor, 2015; Faulkner, Brown, & Quinn, 2018).

Within the present study, we examined both family level and community level resilience within emerging adults, thereby incorporating both the developmental and dynamic nature of resilience. The transition to adulthood is characterized by the development of a sense of community belongingness and simultaneous experience of

diminished connectedness with the family of origin as emerging adults invest in romantic relationships and friendships (Burt & Paysnick, 2012). The findings suggest that family resilience may serve to support emerging adults through that transition to develop community resilience. As such, family resilience may be one mechanism by which community resilience develops. This is important as measures of community resilience do not often take family resilience into account; but rather, family resilience is typically examined as a separate construct (Walsh, 2021). Future research is needed to test a model of community resilience that incorporates family resilience.

Further, the results illustrate the importance of incorporating the developmental nature of resilience in work to create an integrated model as the current measures of family, and those of community resilience, do not take into account respective developmental transitions. Future research is needed to better understand the developmental transitions involved in community resilience and their top-down impact on both family and individual resilience. As ours was a college sample, the community examined within the present study is of a transient nature as shifts may come with each incoming and outgoing class. As such, it may present a microcosm in which the developmental transitions of community resilience could be studied. More research is needed to better understand how the transient nature of this community may impact the current findings – an aim which is beyond the focus of the current study.

The use of a convenience sample of college students is a limitation of the current study. Because our sample may not be representative of the general population of emerging adults within the U.S., the external validity of our findings may be limited. Although the use of a convenience sample is a limitation, research has found that using a convenience versus a random sample within developmental and psychological studies has no detectible impact about 50% of the time and a small to moderate impact on results when an impact was detected (Hultch et al., 2002). Additionally, the use of convenience samples is considered the standard within developmental science (Jager, Putnick, & Bornstein, 2017). The use of a college sample limits the generalizability of our findings, but it also it increase the likelihood that our participants were transitioning between their family of origin and forming new community connectedness (Burt & Paysnick, 2012). Thus, the use of a college sample is appropriate with the given aims of the current study. A replication of the current study in a different population is needed to test the external validity of the current results in a sample of emerging adults who have initiated independence from their families of origin but are not college students. More research is also needed to further identify interactions between and among system levels that contribute to resilience. Such research has promise in developing a more integrated and comprehensive model of resilience

Main Text (Review only)

Although initially described as an individual's capacity to 'bounce back' from adversity (Rutter, 1993), or as a personality trait (Funk, 1992) that was established or not during childhood (Masten & Reed, 2002), contemporary research identifies resilience as the outcome of interactions between and within the levels of complex systems to include the individual, family, and community (Acosta, Chandra, & Madrigano, 2017; Distelberg & Taylor, 2015; Faulkner, Brown, & Quinn, 2018). Research at each level has identified shared protective factors that contribute to resilience (Houston, 2018). For example, social support, consisting of interpersonal trust, a sense of unity, planning behaviors, and self- and goal-efficacy have been found to predict resilience within individuals (Ponce-Garcia, Madewell, & Brown, 2016; Smith et al., 2022), families (Isaacs, Roman, & Carlson, 2020; Maurovic, Liebenberg, & Feric, 2020; Qiu et al., 2021), and communities (Houston, 2018; Wei et al., 2020). Although such protective factors have been found to influence resilience within each systemic level, little research has examined protective factors of resilience across levels and such research is needed in order to bring about a more integrated and comprehensive model of resilience (Koliou et al., 2018; Masten et al., 2021).

Despite the presence of protective factors that cross-cut the various levels, the majority of the extant literature examines resilience as a static property within a single level (Cutter et al., 2008; Faulkner, Brown, & Quinn, 2018). This approach is not without merit as it has resulted in the identification of common protective factors that contribute to the development of resilience at each level. These factors include social support, social cohesion, self or system regulatory skills, efficacy, planfulness, optimism, positive regard, and achievement motivation (as reviewed by Masten et al., 2021). Each of these factors take on different characteristics relative to the level at which they occur. For example, planfulness at the individual level, including college students (Sas, Hamilton, and Hagger, 2022), is typically indicated by prioritizing, making lists, and goal setting (Burt, Keith, & Masten, 2010; Ponce-Garcia, Madewell, & Kennison, 2015). At the family level, planfulness involves collaborative problem solving, resource management, and goal setting (Walsh, 2021). At the community level, planfulness is indicated by the collective ability to anticipate risk, locate and disburse resources, and enhance preparedness activities (Wei et al., 2022). At each level, resilience is demonstrated when regulatory skills are adaptively used to identify and/or prioritize the use of resources to mitigate risk. However, little research has examined the relationship between resilience across levels. Such research is needed to help develop an integrated model of resilience (Koliou et al., 2018; Masten et al., 2021).

As a developmental construct, resilience is a product of transactions within and between components of the individual, family, and community systems (Fanti, Panayiotou, & Fanti, 2012; Griffiths & Tabery, 2013). At the individual level, genotype and phenotype are determined through an epigenetic process and are further influenced by the context in which development occurs. For example, relational transactions between parent and child during childhood have a bearing on development during adolescence. In this way, individual resilience is shaped by individual factors, as well as having a reflexive bi-directional relationship within the family context (Griffiths & Tabery, 2013). Because development, and therefore resilience, occurs as a synergistic property that emerges from internal and external interactions between and within each level of the system, the result at any given level is not isomorphic with any other level (Faulkner, Brown, Quinn, 2018); but rather, resilience is an adaptive process of a dynamic system (Masten et al., 2021). The nature of resilience as a dynamic and adaptive developmental process is widely understood within research. Due to the social structure and increased need for communication within groups as compared to individuals, the protective factors that are common across levels take on a more collaborative structure within the family and community (Houston, 2018). Thus, it is indicated that research examining resilience across levels will be better facilitated by first understanding the relationship between family and community resilience.

Recognizing the need for research examining resilience across levels within dynamic systems, Houston (2018) proposes a framework in which the organization of community resilience, in that it is comprised of families, individuals, agencies, and commers, facilitates the assessment of resilience across levels, as the community level is positioned well for both top-down and bottom-up comparisons. In this view, community resilience factors include connection and caring, resource availability and procurement processes, perceived transformative potential as indicated by trust, hope, and optimism, disaster management, information sharing practices, and communication infrastructure (Houston, 2018; Pfefferbaum et al., 2015). Within this framework, and within the current study, communities are defined as groups with close cultural, ethnic, and/or geographic connectedness consisting of people, resources, organizations, structures, and systems (Houston, 2018; Isaacs et al., 2020; Wei et al., 2022; Koliou et al., 2018; Pfefferbaum et al., 2015; Sherrieb et al., 2012).

A multidisciplinary perspective of community resilience including findings from environmental science, psychology, economics, engineering, climate science, and sociology offers a broad view of community resilience that includes environmental, epistemological, economic, infrastructural, hazard-driven, and emergency response systems (Koliou et al., 2018) in addition to the social/societal system component that is the focus of the present study. As reviewed by Koliou et al. (2018), a multidisciplinary framework integrating indicators of community resilience that account for the complex and dynamic influence of systems is needed. Research such as the present study is needed to develop models of resilience across levels within each discipline before integration can be fully accomplished (Houston, 2018; Koliou et al., 2018). The present study takes an incremental step toward this goal by examining the relationship between family resilience and community resilience, as assessed by community members' perceptions of connectedness, resources, transformative potential, disaster management, and communication (Cui, Han, & Wang, 2018; Pfefferbaum et al., 2015; Pfefferbaum et al., 2013; Wei et al., 2018).

With a focus on the relational aspects of resilience within dynamic systems, research examining the family as a functional system has identified factors of family resilience to include optimism, meaning-making and perspective-taking, spirituality, unity and connectedness, flexible planning and goal setting, open and clear communication strategies, and collaborative problem solving (Duncan et al., 2021; Sabah et al., 2021; Walsh, 2021). Family resilience, much as resilience within any system, is viewed as dynamic, developmental, and both proactive and reactive to risk (Duncan et al., 2021; Sabah et al., 2021; Walsh, 2021). Not only are families impacted by the risk experienced at the individual level; but the quality and availability of physical, social, and emotional resources shared within families determine the individual's and family's ability to foresee, prevent, and respond to risk (Distelberg & Taylor, 2015; Maurovic et al., 2020; O'Neal et al., 2018). Family resilience is not achieved as the sum of resilience levels possessed by the individuals who make up the family; but rather, as the result of interpersonal dynamic transactions involving unity, resources, challenges, values, and goals as elucidated by Walsh (2021). For example, O'Neal et al. (2018) found that an individual's perception of reintegration after parental/spousal deployment was related to their perception of overall family resilience but was not related to their perception of resilience within individual family members. Ponce-Garcia et al. (2019) found that intergenerational relationships function as intermediaries in supporting individual resilience within indigenous communities. In addition, Distelber & Taylor (2015) found that individuals were more likely to access community resources if they perceived their family as resilient. Research using a systems perspective of resilience has advanced the understanding of the relationship between individual and family resilience; however, more research is needed to better understand the relationship between family and community resilience (Walsh, 2021).

Resilience is not only an emergent property of dynamic systems, but it is also a developmental construct (Fanti, Panayiotou, & Fanti, 2012; Griffiths & Tabery, 2013; Masten, 2021). Research seeking to better understand the interaction within or between levels of dynamic systems that produce resilience must also incorporate the developmental nature of the construct (Cutuli & Herbers, 2018). Developmental transitions are a time in which

dynamic systems reorganize to facilitate a change in functional processes (Schoon, 2021; Wieczorek, 2018). During these transitions, development is more plastic due to instability, growth, and change (Schoon, 2021). Because development is more plastic during transition periods, developmental transitions have been the target of intervention efforts designed to improve or support resilience in ecological, community, family, health, and psychological systems research (Faulkner, Brown, & Quinn, 2018; Hadfield et al., 2018; Houston, 2018; LaCount et al., 2018; Masten et al., 2021; Okano et al., 2019).

During prenatal, neonatal, and infant development, transitions are referred to as sensitive or critical periods because these are times in which the neurobiological structures needed to support future social and cognitive achievements are particularly vulnerable to risk within the environment (Gabard-Durnam & McLaughlin, 2019). Across childhood and adolescence, both social and cognitive development are significantly affected by interactions within the environment (Cousijn, Luiten, & Ewing, 2018). In emerging adulthood, the ages between 18 and 30, individuals enter a developmental transition that is characterized by the establishment of new community belongingness, a shift from the family of origin towards friendships and romantic partnership, risk taking, and professional identity development (Burt & Paysnick, 2012). In response to these changes, emerging adults experience neurobiological development in areas known to advance sociocognitive skills (Bennett & Baird, 2006). Taken together, these findings indicate that emerging adulthood is a developmental transition in which resilience levels within the family of origin and new community may be of particular importance to sociocognitive and neurobiological development (Bennett & Baird, 2006; Burt & Paysnick,2012; Cousijn, Luiten, & Ewing, 2018; Masten et al., 2021).

Resilience is assessed in the presence of risk (Masten, 2021; Masten et al., 2021; Ungar, 2013). Within human development, risk can be interpersonal, intrapersonal, acute, chronic, systemic, and/or environmental (Kira, 2021; Ungar, 2013). The life-course perspective views risk such as stress and trauma, whether chronic or acute, as cumulative across development (Kira, 2013). Due to its cumulative influence, the impact of stress and trauma on health and mental health may be more pronounced during developmental transitions (Li et al., 2021). Research has identified emerging adulthood as a time in which the impact of stress and trauma, whether concurrent or cumulative, can lead to marked decline in social identity development, social support, and neurophysiological reactivity to emotional stimuli (Dickey et al., 2021; Kira, 2021; Li et al., 2021).

Although research examining the social/societal aspects of resilience within systems to include individuals, families, and communities has identified key resilience factors within each level, more research is needed to better understand the relationships between these levels (Houston, 2018; Walsh, 2021). In an effort to fill this gap, research examining the relationship between individual, family, and community levels has identified key interpersonal transactions that impact individual resilience (Distelberg & Taylor, 2015, O'Neal et al., 2018; Ponce-Garcia et al., 2019). However, as the protective factors that are common across the levels take on a collaborative structure within the family and community, research examining the relationship between family and community resilience is needed (Houston, 2018). Because emerging adults are in a unique developmental transition in which they rely on their family's resilience as they develop identity and connection with their new community (Bennett & Baird, 2006; Burt & Paysnick, 2012; Cousijn, Luiten, & Ewing, 2018; Masten et al., 2021), research seeking to understand the relationship between family and community resilience will be facilitated by the use of an emerging adult sample. The purpose of the present study is to test the hypothesis that family resilience predicts community resilience during the transition to adulthood in a sample of 593 emerging adult college students in the mid-South region of the United States (U.S.).

Conclusions

Advancing the understanding of resilience across and within dynamic systems to include the individual, family, community, and society requires that incremental work be done to identify the mechanisms and pathways by which resilience develops. The current study answers the call for such incremental work (Houston, 2018; Walsh, 2021) by examining the relationship between family and community resilience within emerging adulthood, a developmental transition most characterized by the formation of new community, independence from the family of origin, and identity development (Bennett & Baird, 2006; Burt & Paysnick, 2012; Cousijn, Luiten, & Ewing, 2018; Masten et al., 2021). The results of the current study offer insight into the connection between family and community systems during individual developmental transitions and indicate an important mechanism by which cumulative risk may function. Leaving the family of origin and attending college during the transition to adulthood represents a disruption in both family and community connectedness and the risk of increasing isolation at a time when normative development spurs community formation. The results of the present study suggest that the level of family resilience established prior to and during the transition to adulthood may serve to buffer the impact of cumulative risk and protect development thereby supporting community resilience.

Data Availability (excluding Review articles)

This section should describe how readers may access the data underlying the findings of the study.

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